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EXPLORING THE FRONTIERS



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[Photo - F. S. Smythe

THE CONQUEST OF MOUNT KAMET

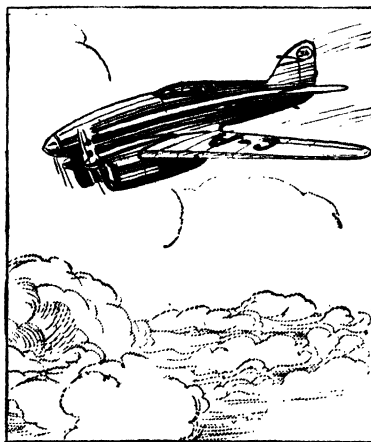
One of the climbers on the Summit Ridge approaching the photographer while advancing towards the mountain-top

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Frontispiece

EXPLORING THE FRONTIERS

STORIES OF RECENT TRAVEL
AND EXPLORATION AROUND
INDIA AND THE EAST



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PREFACE

For centuries explorers and travellers have found adventure in the vast continent of Asia, and even to-day there are on the northern frontiers of India and in the mysterious regions of Central Asia, secrets still unsolved. Fortunately, the spirit of adventure has not been lost with the advance of civilization, and there has never been any lack in modern times of men willing to brave discomfort and danger in order to scale an unclimbed peak, or pass through an unexplored river valley, or traverse a forbidden land.

In this book are told the stories of some of those adventures—of how Lhasa was reached, of how men stormed the fastnesses of the Himalaya and the Karakoram, of how the Borderlands of Burma were explored, of how Everest has repulsed the assaults by climbers but has had to yield her secrets to the men who approached her by air. They are enthralling stories of endeavour and courage and achievement, and of the risks that are run to add to geographical knowledge.

In two of the chapters, the value of the aeroplane to the explorer is demonstrated—and both Mr. Walter Mittelholzer's flight over Demavend and the Houston

Expedition's flight over Everest show that courage and tenacity which belong to the highest traditions of exploration.

The publishers acknowledge their thanks for the use of copyright material to Mr. Walter Mittelholzer for "An Airman in Persia" from *Flying Adventures*, to Mr. A. W. Strachan for "Mauled by a Tiger", and to Mr. B. Webster Smith for "In and Around Lhasa, the Forbidden City", and "In Indian Borderlands" from *Some Triumphs of Modern Exploration*, for "Himalayan Peaks and Karakoram Glaciers" from *Pioneers of Mountaineering*, and for "The Attack on Mount Everest" from *True Stories of Modern Explorers*.

An Airman in Persia

In 1924, Walter Mittelholzer, the famous Swiss airman, was invited by the Persian Government to undertake an aerial survey of their country. He flew from Switzerland to Persia, but owing to a faulty map, could not locate Teheran, and had to land near a small village. Unfortunately, the ground was hard and uneven and his aeroplane was badly damaged. Now the airman himself takes up the narrative.

While my mechanic was having the greatest difficulty in keeping at bay the swarms of Persians who literally seemed to be sprouting out of the earth and were as inquisitive and impudent as schoolboys, I tried to find from my small pocket dictionary how to inquire the distance to Teheran in Persian. At last a dozen Persians, all talking and gesticulating at the same time, managed to convey to me that it was six farseh away, and that the town lay to the N.N.W. It was three in the afternoon when we landed, and the sun's rays

were burning hot, but I thought that I might reach the capital on foot in one or two hours, as I thought that one farseh would be about a mile. At length, but only with the aid of an English golden sovereign, I managed to persuade one of the bystanders to accompany me.

My mechanic remained by the plane and afterwards told me that he had almost been driven crazy by the mischievous curiosity of the natives, who had never seen an aeroplane before, and looked upon it as some work of the devil, until he finally obtained elbow room and due respect with the help of a leather strap. My companion, a man in the forties clad in baggy trousers and a long yellowish cloak, with a high crowned black felt hat on his flowing black locks, set a brisk pace cross-country, over cornfields and ditches. There was no road here, but we passed various interesting old ruins and round towers decorated with highly ornamental carving, until after one and a half hour's walk, we reached the next village, surrounded by six feet high mud walls. My guide entered a small courtyard, shut in by still higher walls. I caught a glimpse of two women disappearing hurriedly, and then passed through a doorway, hung with carpets, into a small room with alcoves. My companion murmured a few words which I did not understand, and inviting me to be seated on a case covered with a rug,

proceeded to take off his boots, and bade me do likewise.

I was anything but pleased at this unwelcome interruption of our journey, for my one aim was to reach Teheran as quickly as possible. But in vain did I try to explain to the man that I wanted to reach Teheran that same day—he merely repeated with perfect tranquillity: “Teheran, Teheran.” I could therefore do nothing but await the coming events as patiently as I could.

Outside the last red sunrays were climbing up the mountains; the majestic snow-capped peak of Mount Demavend reflected their radiant glow into the farthest corners of the land, and then the last ray died away, as night—our first night up there on the high Persian plateau alone amongst strange people—silently spread its wings and descended on us with uncanny rapidity. A woman’s shrill voice resounded in the courtyard. My Persian got up and went out and then came back into the cold room with a glowing brazier, the contents of which he proceeded to empty into a container in the seat on which we had been sitting. The lid was closed again, the rugs replaced, and then he invited me to put my hands and feet beneath the covering. Squatting on the floor—this is the Persians’ most natural position of repose, for they know neither tables nor chairs—propped up on cushions, we crouched round

this extremely simple and highly effective "central heating" installation (in Persian it is called "Kursih").

Meanwhile the news had rapidly spread through the village that the Devilman of the air had arrived; one by one, villagers silently filed into the small room, and each took his place round the Kursih; they smoked and talked, handing round their pipe or self-made cigarettes from mouth to mouth. Each time a fresh pipe was lit, it was offered to me for the first few puffs, after which the next in the room felt himself especially honoured. Their grave and respectful glances were continually fixed on me, and my watch, pocket lighter, electric torch, penknife and notebook were objects of their unbounded interest and admiration. I then began spelling out Persian from my pocket dictionary, and asked for eggs and bread, which were promptly brought in on a plate, having been prepared by the woman outside. The Persian does not use a knife and fork, and accordingly is amazingly expert at eating everything with his fingers, and I noticed how secretly amused the men were at my clumsy attempts to manage the food in this way.

Meanwhile I had managed to make out that the village in which the plane landed was Damsobad and that the distance to Teheran was six farseh; a farseh is roughly four miles, so we had about

twenty-five miles to go altogether. My guide wanted to push on next day at dawn, in order to arrive in the capital by noon. At 8 o'clock the company withdrew, I reclined on one side of the Kursih, and Abekba, that was my Persian's name, lay on the other side, though without taking off his clothes (Persians never undress for bed). The fine ashes spread a very pleasant warmth, and I was soon fast asleep. Next morning a fair hand pushed a big brass tea-kettle through the curtain into our room, my Persian raked up the ashes, and in a few minutes this cheapest and simplest of ovens was once more dispensing its warm glow. A not very clean cloth was spread on the carpet, and while the Persian proceeded to say his morning prayer, prostrating himself on the ground four or five times, I eagerly devoured brown cakes and drank tea. The sun was already shining brilliantly on the bare tree trunks as we started off on our journey at seven o'clock, and in spite of our mishap of the previous day, the deep blue of the sky and the refreshing mountain air were enough to fill me with a feeling of contentment and pleasure.

We set off at a brisk pace through the fresh morning air, and tramped cross-country over fields, frozen streams, and then again uncultivated wasteland, passing a few interesting villages and long camel caravans on our way. After two hours'

march my companion showed signs of fatigue, and in the first village we reached, which was connected with the capital by a cart-track (to call it a road would be an exaggeration), chartered a cart. I had to give the old robber of a driver two gold coins to clinch the matter, but my complete ignorance of the language put me entirely at their mercy. At last at about 1 p.m. we reached Teheran by way of Schah Abdul Azim, a place of pilgrimage which is connected with Teheran by an ingenious railway, on which the only engine they possess steams up to the capital and then free-wheels back as the line runs slightly downhill. Our cabby drove us straight to the only address he knew—the German legation—where I arrived, dusty and bedraggled after the long journey, right in the middle of a very elegant wedding party, to which Graf von Schulenberg, the charming Ambassador, hospitably introduced me.

Next day I was taken back to Damsobad in a car, accompanied by two mechanics and an interpreter. The Persian authorities had rushed up a detachment of soldiers during the night to guard the plane, for otherwise we would not have been able to master the crowd of natives who had swarmed from all sides.

The plane was hoisted up and the fractured struts taken to be repaired in the arsenal in Teheran. Then we brought them back, fitted

them, took off, and flew the plane straight to the aerodrome just outside the town. The low hills which surround Teheran to the east are perfectly barren and surmounted by vast red banks of earth. It was that which hid the town from my view as I approached the oasis of Vira^min coming from the salt lake, besides which my map showed Teheran as situated right on the edge of the desert without any intercepting hills to the south-east. Thus it was that, not seeing the town where it ought to have been according to my map, I decided to land, with the unlucky sequel of our broken undercarriage. But that was now happily repaired, and the strut had been reinforced to withstand even the bumpiest landing. We were lucky anyway to have come down so near Teheran, for an hour farther away the accident might have cost us our machine.

Now we were circling triumphantly over the yellowish brown sea of houses, beneath us an entrancing pan^orama of old walls, gateways, mosques, and palaces dotted over the widespread town. The aerodrome lay about five miles east, and looked almost European with its four big hangars. We glided down after half an hour's flight, and swooping over mule and camel caravans, landed on the hard desert ground, to be greeted by Persian staff officers, who heartily welcomed us in perfect French.'

The most important line of communication in Persia is the north-south route, which extends from Enzeli, on the Caspian Sea in the north (Persia's outlet to Russia and Eastern Europe) to Teheran, and then right down to Bushire on the Persian Gulf in the south. It traverses the whole length of the country, connects the principal towns, and has always been an extremely important highway. The Persian Government fully realized its importance, and there were plans for the construction of a motor road under discussion. Even a railway was projected, for a caravan journey takes anything from four to seven weeks, and by car it is an extremely arduous undertaking to cover the 900 mile distance, which includes several high mountain passes, some of over 8000 feet and therefore snow-bound in winter. From Teheran to Isfahan alone takes four days, and the last section in particular, from Shiraz down to the coast, is a really dangerous feat for a motor-car.

This route had already been flown a few times during the War and afterwards by English, German, and French pilots, but my idea was to fly it in a single day, as a striking demonstration of the immense possibilities of aviation in this undeveloped country. With the primitive means at our disposal, I intended to pave the way for the future development of a regular air service,

with large, multi-engined, all-metal, passenger and freight carrying planes, in constant wireless connection with the ground, and with a thoroughly efficient ground organization. At that time this was considered to be a dream that could not be realized.

But Reza Khan, Persia's strong man, was enthusiastic and interested himself personally in our preparations and exploits. After a thorough overhaul of our plane and a few trial flights we set off one fine morning with complete alpine equipment on board, including our skis, a very necessary precaution in case of a forced landing in the high mountains. I also had photographic material for 500 photos with me, for there existed neither maps nor photographs of large sections of the country we flew over, and this, like nearly all our flights, was not only of commercial and postal interest, but also served the cause of science. The flight itself was highly interesting, and revealed to us many scenes of rare beauty. I flew low over Kashan and Isfahan taking photographs, and then climbed to cross the vast snow-covered mountains. Shortly afterwards the Gulf was in sight, and six hours after leaving Teheran we landed in Bushire, to the great surprise of the Persians and Europeans who had not been expecting us till much later.

For the return journey I decided to make a

detour, in order to visit the majestic heights of the Demavend, before returning to 'Teheran, whence I was to go to Bagdad by car.

This flight across the premier mountain in Persia, the ice-crowned Demavend, which towers to a height of 18,600 feet, was the culminating achievement of my Persian flight, and is indelibly impressed on my memory, as I was the first to fly over it. I wrote in my diary at the time as follows: "The 10th of March, 1925, the last day of my flying activity in Persia, dawned with a cloudless, deep-blue sky and brilliant sunshine. That was nothing unusual, for during my forty-three days' sojourn in Persia only two days were dull and rainy—an ideal country for air traffic."

Outside the gates of Isfahan, where we made our last preparations in the midst of a great crowd of onlookers, the sun shone with astounding power. The high chain of mountains in the north, which I had to fly over, could not be seen, however, on account of the mist, but the view from our high starting place over the town at our feet and over the surrounding mountains was enchantingly beautiful.

Under full gas pressure, our plane plunged down the hillside, and after a short jumpy take-off we were in the air at exactly 8 o'clock.

Below, in the large glittering marble courtyard of the great mosque, near the Meidan-i-Shah

Square, hundreds of the Faithful to the Great Prophet knelt and prayed to Allah, as our machine thundered over their terrified heads.

I soared over dilapidated royal palaces, above a sea of cupolas, towers, and walls, and in a few minutes was over green cornfields and scattered villages. These gave way to immeasurable stretches of desert, and beyond, in the north, the outline of a mountain range gradually rose into view.

At 8.40 the highest peak of this range lay beneath me. To the north the reddish brown walls of rock stood sheer above the weather-worn rock belt of the great Salt Desert. Since my first passage there, a fortnight before, the sun had played havoc with the snow, but no plants or vegetation of any kind sprouted in the barren desert land.

The atmosphere in the north was grey and gloomy. I looked in vain for the proud snow pyramids of the Demavend, which during my first flight had gleamed so supernaturally before me 150 miles away. My hopes of being the first to make a "flying visit" to the still virgin peak diminished as the sun disappeared behind the delicate veil of mist. I glided down from my height of 15,000 feet above the town of Kashan which then appeared before me and over which I flew very low, at 9.5 o'clock, for the purpose of taking motion pictures. I then followed the

caravan route which leads to Qum, in order to pay a visit to that celebrated place of pilgrimage, with its golden mosque, sacred to the Shia sect of Mohammedans. Flying not more than thirty feet above the track, we easily overtook one caravan after another, and enjoyed the commotion which our roaring machine caused below. The camels merely raised their startled heads, but the mules and donkeys fled terrified from the track, stumbling into the hollows and holes and scattering their heavy burdens.

The irregularities of the land which followed forced me to fly higher for caution's sake. When, after half an hour, I was again at a height of nearly 10,000 feet, I suddenly saw before me, hanging in the grey void of the sky, a bright triangle. At first I took this to be a mirage. But, after a while, there was no doubt possible; it was Demavend, its highest peak towering above the veil of mist.

According to my calculation, I was still about sixty miles south of the Demavend, and, giving my engine gas, I gradually rose through the misty veil from the gloomy grey depths of the deadly Salt Desert up into the dazzling sunlight.

At 10.30 I had reached a height of 16,000 feet. Below me was a sea of fog, above me the deep blue sky, and before me hundreds of minor snow-peaks, above which the once-active volcano of

the Demavend towered majestically, like a ghost. Now and again, through gaps in the clouds, I could see, far down in the narrow ravines, mountain villages hanging like birds' nests to the green slopes traversed by foaming watercourses. My chronometer registered exactly 10.46 as I shot over Demavend at a height of 18,700 feet above sea-level, hardly more than 100 feet higher than the conical peak.

I was just about to take my hands from the controls for a moment to take the motion-picture apparatus from my mechanic, who had reloaded it, when we were suddenly flung high from our seats, then thrust head down. Only after some seconds could I get the plane under complete control again. Behind me loomed the Demavend. The height aneroid showed me that we had been driven down more than 600 feet by the "fall wind". During this rapid descent the motor sputtered, owing to the lack of flow of fuel into the carburettor, so that the machine jumped and trembled — a really uncomfortable situation!

To the north the mountain falls steeply, in richly wooded ravines, to the rice fields of the Caspian Sea, the shore line of which could be faintly seen. I flew in a wide curve to the left, again heading towards the north, at a respectful distance past the Demavend, and then turned

towards Teheran, above several long ranges to the south-west.

Far away in the west three snow-capped chains, more than 14,000 feet high, rose above the sea of peaks and clouds. Over these I had flown four weeks previously to the Caspian Sea. Once more I drew round in a curve, and feasted my eyes for the last time on the beauties of the Persian highlands. At a height of 11,000 feet I passed through a gap in the cloud covering and was again tossed violently backward and forward before we finally came into the lower air strata not far from Teheran. Below there was the smell of spring in the air, and in the gardens of the capital there were many green spots where all had been bare a few days previously. After a four hours' flight I landed safe and sound, at 11.50, in the aerodrome before the Kazvin Gate.

—From *Flying Adventures* by Walter Mittelholzer.

In and Around Lhasa, the Forbidden City

To some people the sign "Trespassers will be prosecuted" is a direct invitation to climb over the fence. Such persons are not necessarily born explorers—they might be merely poachers!—but they have at least one exploring instinct, the desire to penetrate into that which (because it is hidden) is mysterious.

Perhaps the best instance of this in records of travel has been the incessant endeavour to get to Lhasa, the chief city and holy place of Tibet; an endeavour that has almost invariably been thwarted by the ignorant opposition of monks or lamas.

Besides its three great monasteries Lhasa contains a huge golden image of Buddha; its unpaved streets are trodden daily by pilgrims and monks, all indescribably filthy, vacant of gaze, and muttering the inevitable Buddhist expression, "Om mani padme hum"; and as the holiness of the city rested upon the keeping-out of unbelievers,

the one aim of the lamas for centuries has been to keep it undefiled by foreign footsteps.

Lhasa stands in a secluded valley a short distance north of the Sanpo, or Brahmaputra, the great river of Tibet. It is within 200 miles in an air line, of Sikkim, that northern projection of India which is sandwiched between the buffer states of Nepal and Bhutan. A trade route passes along this road; and it was also used by the British Mission to Tibet in 1903-4. Ordinarily, however, the Government of India refused explorers permission to cross the frontier; so that they had either to pass round the western end of the Himalaya 1200 miles away, or else enter Tibet from the still more remote countries of Turkestan or Mongolia.

Although founded more than 1000 years ago, and long renowned for its temples, with their glittering roofs and golden idols, Lhasa remained unseen by Europeans until 1662, when two Jesuits, Grueber and Dorville, carried their creed thither; these men were followed by others in 1716. The Capuchin monks also established a mission there in 1708. None of these enterprises prospered, and eventually all foreigners were once more excluded. The great statesman of our early rule in India, Warren Hastings, made attempts to open up a trade with Tibet by way of Sikkim; but his ambassadors, George Bogle and

Samuel Turner, got no farther than Tashilunpo, on the Lhasa road, where they were received well enough, but were restrained from proceeding farther. In 1811, however, a remarkable Englishman, Thomas Manning, penetrated to Lhasa, where he stayed unmolested for some time. The barrier was then dropped again; and only once between Manning's time and 1904 did a white man visit the city: this was the Abbé Huc, in 1846.

Lhasa is ruled by a High Priest, the Dalai Lama, whose power is such that he really dominates the country. The frequent Regents, likewise the Chinese Viceroy and the Tashi Lama, are also important men; but the real power lies in the three great monasteries of Lhasa, with their thousands of unwashed, yellow-capped fanatical monks. All these authorities normally pulled against one another; in fact, the only thing that could unite them speedily was hostility to the foreigner.

This was the position in the early 'nineties of last century; when Tibet had for so long been a closed land that it had become a point of honour among explorers to attempt its penetration. So long as such adventurers kept in the remote northern or western provinces they ran no great danger, other than that arising from the loss of transport and the probability of starvation.

Farther south, however, robber bands might pilfer them, and local headmen would be sure to try to thwart them, while on any of the main roads a whole army of scowling Tibetans would speedily bar their advance.

Governments also took a growing interest in the wild valleys and snowy passes of Tibet. For many years Russian expansion had been towards the east and south-east; and she had steadily swallowed up the independent states of Khiva, Bokhara, Merv, Samarkand, and Kohand. English politicians, and particularly English writers, loudly exclaimed that Russia was menacing India; with the result that a vastly greater interest arose in the countries bordering on India.

As Tibet was closed to Europeans, other means had to be employed to glean something about the nature of the country, and what went on there. For this purpose specially trained natives were engaged. They were taught surveying in order that they might bring back maps; and were dispatched to Tibet, usually disguised as merchants, with orders to attach themselves to caravans, to survey the routes, and sometimes to do special tasks. Their instruments, of course, were hidden among their wares—Chandra Das, for instance, hid his inside a prayer wheel; while the observations always had to be taken by stealth, and usually under dangerous circumstances; for if detected

the unhappy men were liable to death, or at the least, slavery. Prayer wheels, by the way, are cylinders bearing large numbers of the words "Om mani padme hum", written over and over again: the more numerous the words, the holier becomes the man who turns the wheel. The wheel has to be turned to the right; and in conspicuous places large ones stand by the roadside, with millions of these words inside them, printed on scraps of thin paper.

For measuring distances the native surveyors depended upon strings of beads, which they carried in their hands; by this means they counted the paces from place to place. The mechanical work involved in thus measuring distances of 1000 to 1500 miles is immense, but it was done; and all things considered, a very fair idea of Tibet was obtained. One famous surveyor, Nain Singh, even stayed in Lhasa; another, A. K., spent the greater part of the year 1879 there. These natives, however, had no eye for anything beyond their instructions; they could keep scarcely any records; and the information they had procured was extracted from them mainly by careful questioning after their return. Thus, every fresh journey only whetted the desire of their masters for more accurate data, i.e. more *facts*.

This inquisitiveness concerning Tibet was not confined to those most interested, the British and

Russians. W. W. Rockhill, a learned American, made three separate attempts to get to Lhasa, armed with every sort of authority from China; but, approaching from the north, he was turned back long before nearing the capital. Two French travellers, G. Bonvalot and Prince Henry of Orleans, also passing from north to south in an adventurous journey across Central Asia, made a dash for the place in 1890, and were only pulled up when but a single mountain range intervened between them and the city's golden roofs. Four years later another Frenchman, the unfortunate Dutreuil de Rhins, while on a similar course, was attacked and thrown while still alive into a river (probably the upper Yangtse-kiang) and drowned. Many other men crossed Tibet from west to east, or vice versa; and so long as they did not venture too far south they were quite safe. The two most troublesome people with whom the Tibetans had to deal, however, apart from Younghusband, were the indefatigable Sven Hedin and the iron-willed Littledale. Both of them got within striking distance of Lhasa, only to be turned back at the last moment. Littledale's famous journey, in 1895, was highly adventurous, and we will follow him now.

St. George R. Littledale was primarily a hunter of rare wild animals, especially the very shy Asiatic sheep, *Ovis poli*, and the wild camel; but

with his hunting he combined surveying, and he always chose out-of-the-way places for his journeys. He had already had considerable experience of Central Asia, having twice crossed the Pamirs or high mountain valleys north of Chitral, besides making the long through journey from Turkestan to Peking. He knew to a nicety the ways of the Oriental, and he went provided with a large supply of the sinews of war, i.e. money. This was carried in silver bars; and when his change ran out he had to have them chopped into small pieces by a local blacksmith.

With him went Mrs. Littledale and his fox terrier, both of whom had braved the exposure and risks of the region before. His nephew, Mr. W. A. L. Fletcher, a giant young man six feet six high, completed the party.

Thanks to Littledale's admirable faculty for getting on good terms with Russian officialdom the little expedition and its bulky baggage passed without delay across the huge Russian Empire, from the western shore of the Black Sea to the limits of eastern Turkestan. They travelled under the shadow of the jagged Caucasus; crossed the Caspian Sea in a crowded lake steamer; and thence went, mainly by tarantass (a wooden cart), to Merv, Bokhara, Khokand, and Kashgar; then on to Yarkand, a great caravan mart, whence roads run to Kashmir on the south, Turkestan on

the west, and China on the east. Only a few years earlier these names would have brought a thrill to one's blood; for the places were hornets' nests of brigands and half-wild petty chieftains, to whom murder was an every-day occurrence; and anyone who ventured thither certainly took his life in his hands. By Littledale's time, however, all the principalities had been swallowed up in the strong embrace of Russia, and travelling had become as safe as is possible in a land where thieving instincts are so well developed. It is worth noting that this preliminary journey to Yarkand, involving the transport of all the most valuable portion of the baggage, amounted to 4500 miles.

Littledale's intention was to reach the high Tibetan valleys in the spring, when the scanty grass supply would be fresh and young; otherwise he would have been compelled to carry fodder for all his animals throughout, because during the colder months it is hard to find a living thing there. Accordingly, the first part of the long journey took place during the bitter mid-continental winter. It was sometimes so cold that water poured into a glass froze ere it could be drunk.

While at Kashgar, they met a man who was destined to cause the Tibetans even more trouble than themselves, Dr. Sven Hedin, who was already well known for his desert journeys in

Persia, Turkestan, and adjacent parts. The Chinese authorities at Kashgar entertained the two explorers with a dinner, at which the following curious fare was provided: "Eight dishes of sweets, cut into small pieces; then followed sharks' fins, sea slugs, bamboo shoots, and numberless greasy dishes." The Asiatics of this part, like most races who are uncertain when they will get their next meal, are inexhaustibly greedy, and will speedily eat a whole sheep, continuing at the table long after the European has eaten enough.

From Yarkand, Littledale travelled eastwards for a long while on the Peking caravan road; crossing uninteresting wastes, with the huge dunes of the Taklamakan Desert on his left, and a mighty snow-clad mountain range, the Kuen Lun, on his right: the latter formed the northern battlements of Tibet, and sooner or later he would have to force a way across it. Finally he stopped at Cherchen, a town in the desert, where he engaged men who were supposed to know the way across the Kuen Lun. As supplies would henceforth be unobtainable anywhere, he also acquired 250 animals and numerous carriers, a flock of sheep, and 11 tons of Indian corn. Twenty-four days were spent in Cherchen before this large caravan could be collected.

On 12th April they at last got away. Wood soon became extremely scarce, and they were forced to

rely upon the standard fuel of that region, dried camel dung; this is known as *burtza*, and it gives out a pungent blue smoke, and coats everything in the vicinity with soot. Rivers across their path occasioned difficulty, sometimes necessitating long detours before they could be forded, for there were no bridges. At one place a stream ran across the centre of a frozen marsh, with banks of ice 4 or 5 feet high on either side; down the channel cakes of ice gaily floated with the torrent, and one of these caught Littledale and his pony, and carried them some way down before they could recover. A way down to the water and up from it had also to be cut by breaking away the ice cliffs with axes. A little later the drivers became alarmed as their distance from Cherchen lengthened, and they asked to go back; but Littledale refused, and by promises induced them to continue.

On 28th April they were high in the mountains, and succeeded in crossing a pass in a snowstorm; however, still higher mountains loomed ahead. They had no guide who knew anything about the district; there was no fuel and no green fodder; and without fuel they could not melt the ice so as to get water. By persistence, however, things improved. Next day the country opened out; water and grass came in sight; and as the men assured them that they were now in Tibet, most

of them were paid off, being sent back with all the surplus animals. Alas for Turki truthfulness! They soon found that they were still on the wrong side of the main mountain chain; and going up one valley and down another, looking for a pass, in bitter weather, with frequent snowstorms, was slow, disheartening work. After ten days of it they at last found a way over into Tibet, but the ascent cost them five or six donkeys and two horses, and the death of an animal meant of course the redistribution of the loads. It was a great relief to Littledale to find the snowy peaks behind him; in front stretched a limitless prospect of flat plains, bordered by distant mountains, and usually containing cold clear blue lakes.

When we talk of the Tibetan plateau an idea rises in the mind of a high plain buried in snow and containing only a few miserable inhabitants. This is altogether wrong. Tibet is not really a plateau at all. It is a series of very high valleys, mostly about three miles above the sea, all running more or less from west to east, and separated by eight great chains of mountains; owing to the great altitude of the valleys the mountains exceed them only by 2000 or 3000 feet, though occasionally giants soar much higher. The seven main valleys are broken up by cross hills into innumerable small basins, most of which contain lakes and very little else; and the mountains come down to these

valleys like cliffs to a shore, often ending there with wonderful abruptness. Except in the south there are no trees, and only in the more favoured districts will grass grow. Most of the rain falls in the south, and here we find the great bulk of the people, congregated in Lhasa, Gyangtse, Shigatse, and other towns, with cultivated fields, temples, gilded images, and all the paraphernalia of their all-powerful religion. In the centre of the country are some celebrated salt workings by the shore of a lake, from which the Salt Road goes to Lhasa, for salt is a Government monopoly. The lonely northern valleys also contain extensive shallow gold workings; and from this district the Gold Road goes likewise to Lhasa, gold being another Government monopoly. As conscience is also a Government monopoly, the poor ignorant nomads, with their cattle or yak, and sheep and goats, have very little that they can call their own, except a view of the cold blue sky, the barren plains, and the dull grey or bluish mountains.

Anyone approaching Lhasa from the north-west, as Littledale did, must cross seven of the mountain systems in succession. It is not really difficult, except at one or two points, as there are numerous gaps; but even in the valleys one is constantly at a height of 15,000 feet or over, and the rare air makes exertion strangely laborious. One's heart beats as if it would burst its prison, and

the prospect of a climb up even an easy pass is a dismal one. The greatest difficulty, however, is to keep the animals of the caravan alive; for throughout the first part of the journey all their food must be carried on their backs. No sooner does one get into the slightly more genial southern valleys than Tibetan shepherds become common, while the plains are dotted by their herds of yak or sheep; and these people are bound, under penalty of a horrible death, to report to the lamas any foreigners found roving the land. Consequently, if one attempts to feed one's animals at these points, one's presence is soon detected; and as the news passes by word of mouth with extraordinary rapidity, opposition can be placed in the travellers' way before they are even aware that their movements have been seen.

Knowing all this, Littledale took good care to keep out of the way; and for a long time his southward progress was made by hopping into ravines and behind cliffs, so as to avoid any natives whatsoever.

For some time this plan succeeded. Besides the three Europeans there were now only ten carriers; and the worst risk they ran was during the morning round up of beasts that had strayed away. In the north, where no Tibetans were seen, numerous antelope dwelt; they were so

tame that one ran along beside the caravan. Unfortunately, wolves also abounded, and one night they raided the caravan, killing the entire flock of sheep.

The party now passed across a succession of short, steep passes, while the weather continued bitterly cold, drifted snow cutting like crystals of glass. The poor animals, deprived of fresh food and weakened by long exposure, lay down, and neither shouts nor blows could raise them; some had to be shot, to put them out of their misery; and every day, as the transport weakened, the loads increased, until at last it became necessary to abandon all comforts, taking forward only what was essential to get to Lhasa. Just as things were looking bad they came to some good grazing; here they stayed a week, fattening up their animals.

On 26th June they saw the first men since leaving Cherchen; they were Tibetan salt collectors, and in order to avoid them Littledale made a night march, but got stuck in an unsuspected swamp. With much muttered bad language from the carriers, and much heaving and hauling, they got out again; and after marching all night camped in a secluded valley on the Lhasa side of the Tibetans.

From this time onwards Littledale and his nephew always went in advance, armed with telescopes; and whenever they detected the sheep-

skin coats of the nomads they changed their course. Frequently it became necessary to camp during the day in a ravine, and to make a march the next night past sleeping natives; herein they ran a risk from the savage Tibetan dogs, but always they escaped detection. It was a near thing, however, more than once; as when a cock and hen fell off a donkey's back and began to clack. While the owner's fingers itched to strangle them a mule trod on a Turki dog, and started it howling! On another occasion they ran into some shapeless forms in the gloom, and procuring lights found that they were only yak!

In this way they crossed like robbers from valley to valley, steadily approaching Lhasa.

The method had its disadvantages. They could not use the main road, of course, and once they came to a river that was too deep to be forded, while a populous plain lay beyond. At this juncture they made a boat out of the camp bedsteads and the tent ground sheet, and with the aid of a rope ferry safely carried everything across in this strange craft. Resource is the explorer's right hand: Mr. G. M. Dyott, when in the Amazon wilds, once damaged his camera so that light got in, but he repaired it with the latex from a green banana. A dozen other cases of this adaptability among explorers leap to the mind.

The Littledales had now almost reached the

end of their tether. They came to a valley which had to be passed, and in which there were thirty tents; so with a bold air they went straight on and passed through unquestioned, probably being taken for merchants. The next day, however, some shepherds detected them, and the hunt was up.

Lhasa was about eight forced marches away. Littledale determined to try to reach it before the local officials could collect their wits or their forces. Accordingly, he now stuck to the road without any pretence at hiding, maintaining a series of running interviews with village headmen and others who threatened or implored them to stop. Crowds of so-called soldiers, armed with swords and ancient rifles, and mounted on the stocky Tibetan ponies, escorted the little caravan; and whenever it halted there was much confusion and gesticulation. Littledale, who had no guides, was compelled to rely to some extent upon these people for the road, and he soon found that whenever they opposed a projected line of advance the correct road was indicated; on the other hand, when they permitted the caravan to advance without hindrance, the course was a wrong one. Once, by doubling on their steps and retreating down a valley, the little party threw the Tibetans off the scent, but generally some of the grimy, stupidly smiling little men were to be found hanging to the travellers like leeches.

Under this strain most carriers would have deserted, and as it was, prayers to Allah were both frequent and vehement. Littledale, however, had some fighting Pathans in his caravan, and these men could be depended upon in case a fight ensued; while he and his nephew were not the sort of men to be stopped by anything short of actual violence.

In this way they came at last to the blue waters of Tengri Nor, the largest lake in Tibet. Here Bonvalot and Hedin had been turned back. Beyond a river lay a maze of dark ravines, leading up into the heart of a gigantic mountain chain, with snowclad peaks; and beyond that was Lhasa. Unfortunately they did not know of any way across this range, nor, naturally enough, would the Tibetans help them; but after some wandering they found a valley in which all the grass had been cropped by animals. Arguing from this circumstance that it must be a much-used route, they began to ascend it; it closed in, becoming a narrow gorge, while masses of fallen rocks littered the ground. Suddenly they were hailed to stop, and there, hiding behind every rock, were the Tibetans, armed with ancient but quite serviceable matchlocks, and determined to dispute the road. Littledale went forward, waved his Chinese passport about, and explained, with appropriate gestures, exactly what would happen

if the Dalai Lama learned that he had been detained, but such threats had no more success than those of previous travellers had done. "Back you go!" was the cry. He then ordered his men to load their rifles; and at this sign of serious trouble the Tibetans became alarmed and hung back. Littledale at once ordered his caravan to advance, and the murmuring mob was soon left behind.

Shortly afterwards they climbed over one of the highest passes in the world, the Goring, 19,587 feet above the sea. The top was simply slippery ice, flanked by bare mountain walls on either side; part of this glacier was broken by crevices, and treacherously steep on the Lhasa side. It was snowing hard, the thin needles blowing into their faces and reducing the visibility to a hundred yards or so.

Had they pushed on they must assuredly have got into Lhasa; but unhappily the transport had lagged behind, the donkeys experiencing great difficulty in getting over the high pass. When at last they did arrive at the camp that had been made below the glacier, they were exhausted. Another day was lost in resting them, and in this interval the Tibetan resistance at last became effective.

Lhasa had become alarmed. Littledale, standing at the door of his tent, heard the clatter of

hoofs; a cloud of dust ascended the valley, and from it there emerged "a comical, jovial, round-about" person, evidently a high official, accompanied by about a hundred armed men. He wore a broad-brimmed hat carefully covered with green oiled silk; and he explained, squatting on the ground in characteristic fashion, that if he permitted the party to continue he would certainly have his head cut off; nor was this mere bluff, as some people who contributed to the subsequent advance of the British Mission were most cruelly done to death in consequence. The Englishmen, at that moment, had nothing to fear; they had plenty of provisions, and time was of no consequence, whereas a row might have brought on fatal results. Rightly or wrongly, the travellers stopped. The next day, three new officials arrived, with more soldiers. A letter was written to the Dalai Lama requesting permission to proceed; the only result being a week's delay, while more and more soldiers arrived.

Meantime, Littledale hoped to beat the Tibetans at their own game of dallying, and amused himself by catching butterflies and plant collecting. Lhasa now regarded him so seriously that the Governor of the city and the head of the army arrived, with clever arguments, and impressive in their richly jewelled clothes. They said he must go back. He retorted, "Impossible!" He insisted

on going forward; and they replied, "Impossible!" Meanwhile, the season was drawing on, and if the fates were propitious, an early autumn snowfall might close the pass, and compel the Englishmen to remain in the Lhasa valleys. The city was distant but little more than a day's ride. The Governor, an elderly and extremely wily old rascal, did not dare to lay violent hands on his unwelcome visitor; in fact, he did not know what to do with him. At this moment a totally unexpected event changed the aspect of affairs completely.

Mrs. Littledale, who had long been ailing, became seriously ill. The great altitude, the daily exertion in the rarefied air, and the hardships inseparable from such a journey, had told upon her, so that medical treatment became an urgent necessity. Littledale at once threw up his plans, despite her protests. He offered a bribe of about £400 to the temples if he were allowed to pass through Lhasa, and down to India by the shortest route, but his communication was never allowed to leave the camp. Realizing their advantage, the other side insisted that he should go back by the way he had come.

Of course he refused, but at last, in desperation, he consented to return to Ladak, a mere 1200 miles, but by a different route along the central valleys. He insisted on a letter from the

Governor saying that all men must help him; it was solemnly written out, and on being translated, was found to read, that all men must turn him back, and not allow him to put a foot on Tibetan territory. He tore it up and demanded a proper one; but on the very same day as the old Lama wrote it, he sent out another, telling headmen to turn Littledale back, wherever he might be!

Sadly the little party began its retreat on 29th August. Mrs. Littledale was now incapable of walking, and wood had to be procured from Lhasa with which to make her a litter. At the dreaded Goring Pass, to which they were escorted by Tibetan soldiers, she took to a yak, on which she rode over the glacier. No sooner were they all safely over than the Tibetans left them, secure in the belief that they could never get back again. Only five men were available for the sixty baggage animals, which strayed all over the place; urgency was needed, both because of Mrs. Littledale and of the onset of the bitter Tibetan winter; and the leader had an anxious time, shepherding his men from valley to valley, besides mapping the route as he went.

Eventually, however, they got out of Tibet without much difficulty, except for one incident, when the Governor's treachery was detected. A headman in Rudok, who had received in-

structions to turn them back, insisted in their going all the way back to the Goring Pass. When they produced their rifles he sullenly gave way.

So ended a long and very important journey, which, although it just failed in its main object, added materially to our knowledge of Tibet.

Apart from the adventures of Littledale and Hedin, the principal interest of Tibet became political. A Mongolian of Russian training, named Dorjjeff (he had other names, but this was his most familiar one), went to Lhasa, where he long resided among the monks, acquiring a considerable influence over the Dalai Lama. Russia naturally seized this opportunity of extending her influence; and a treaty between that power and Tibet would probably have been signed but for the opposition of the Chinese Viceroy and the still more important hostility of the three great monasteries. An anti-British reaction occurred, however, which gave Lord Curzon, then Viceroy of India, an opportunity of intervening. After much argument with the home Government, a Mission was decided upon, under the leadership of Sir Frank (then Colonel) Younghusband. With him were two other remarkable men: Captain O'Connor, who had an immense knowledge of Tibet and things Tibetan, and Mr. Claude White, almost the only Englishman who at that time was allowed to go to the secluded little court of Bhutan.

The object of the Mission was to demand an explanation of a Tibetan invasion of part of Sikkim, to re-establish trading arrangements, and to insist upon the residence of a British representative at some prominent place in Tibet.

This Mission, which was not at first accompanied by the military, went to Kampa Dzong, a town in southern Tibet at the back of Mt. Everest; and there it stayed from 7th July, 1903, to 6th December, without in any way furthering its objects. The Tibetans first, last, and always sent men from Lhasa who, whatever their authority, were not empowered to do anything. Their only argument was the parrot cry "Back to the frontier!" and they were quite incapable of understanding that the British meant business. The Dalai Lama, who was entirely under Russian influence, thought by this constant dallying to wear out the patience of the invaders, in precisely the same way as he and his predecessors had forced ordinary travellers to withdraw; and in this he had an unwitting ally in the British Government, which was loth to undertake what appeared to be an invasion of Tibet. Younghusband, however, was not the man to be trifled with. He knew from the start that the Mission must end up in Lhasa if it were to do any good; and to Lhasa its steps were directed by circumstances.

It being evident to all by the autumn of 1903

that the Tibetans would neither treat nor fight, military preparations began. The road to Kampa Dzong and that to Lhasa, though side by side, were separated by high mountains. It was therefore necessary for the Mission to retreat, in order that it might advance again along the easier road which had been chosen by the troops. These movements took place simultaneously.

Advancing through Sikkim with about 2000 men, General Macdonald established himself in the high and hitherto unoccupied Chumbi Valley. He had under him six companies of those hardy hill fighters, the little Gurkhas, and eight companies of Sikhs, all, of course, with British officers. Besides this, there were sappers, a machine gun, and some mountain guns, together with all their transport. It was necessary for a great part of the way to make a road for mules, the guns being carried on the backs of those sturdy beasts. The track sometimes tunnelled amongst huge rhododendron trees, interlaced with a hundred creeping and climbing plants, sometimes emerged on the edge of a precipice many hundred feet deep. At some places it was so bad that mule transport was at first impossible, and here all the supplies had to be manhandled. Nevertheless the remarkable feat of getting up all that was needed for the little army went through without a hitch, thanks chiefly to the organizing powers of Major Bretherton.

All being ready, the troops started north on 11th December, 1903, in the depth of winter, to cross the Jelep Pass, a high gap between the mountains, on one side of which lay the forested valleys of Sikkim, while on the other were the barren and bitterly cold high valleys of Tibet. On entering the Chumbi Valley they were soon brought up by a wall at Yatung, which the Tibetans occupied, and were preparing to defend. The orders of the Mission were to avoid fighting whenever possible, but at this anxious moment it looked as if war must break out. As the leaders rode forward, however, the Tibetans came out to meet them; they protested, but did not oppose the advance; the gates opened, and this valuable post was gained without a blow.

The Tibetans were under the impression that their long, bitter winter, with its severe snowstorms and its furious gales, would render impossible any protracted stay on the part of troops fresh from the hot plains of India. In order to impress them, therefore, an advance guard of about 450 men, together with the Commissioners, went on down the Chumbi Valley, crossing the very high and cold Tang Pass; the town of Phari was entered without opposition, and eventually they established themselves at a place called Tuna. Here, at an altitude of 15,000 feet, they stayed through the winter. In all these operations,

remember, the troops were rarely at a much lower altitude than 12,000 feet. Besides the weariness naturally induced by the rarefied air, they had the additional disadvantage of having to carry rifles and accoutrements.

For three weary months the negotiations dragged on without result. Officials of sorts made their way to Tuna, while the Chinese Viceroy, whose authority had been flouted at Lhasa, was openly in favour of treating with the British; but the men who mattered—the grubby, oily little monks, in their crimson or saffron robes, with yellow caps and jewelled ornaments—held aloof. Nine miles north of Tuna, at Guru, a small Tibetan army lay encamped, and thither Younghusband went one day, accompanied by O'Connor. They were received very badly by three Lamas, the representatives of the three great Lhasa monasteries, and for a moment it looked as if they would be surrounded and massacred. By a great display of indifference, however, they overawed the enemy, and withdrew. It was quite clear now to everybody but the Government in London that if British prestige were to be maintained an advance on Lhasa was essential; nevertheless, that advance only came about later, as a result of further humiliations.

During this time the difficult task of pushing up stores to the Chumbi Valley, and constructing



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THE POTALA, LHASA

By permission of Lt.-Col. F. M. Bailey (who took the photograph) and The Royal Geographical Society, London

Lhasa, 1904

a road over the worst places, went on without a break. Meanwhile, the people of that part of Tibet, impressed by the English policy of always paying well for whatever they took, and of not interfering unnecessarily with the customs of the country, everywhere received them with pleasure. Even the abbots and monks of monasteries along the route were willing to admit them, although they hid their most precious ornaments in the nunneries, "because the English were known not to attack women". Only from the bigoted fanatics of Lhasa did opposition proceed; and until these monks were taught a lesson no further progress was possible.

Accordingly, on 29th March, 1904, Macdonald set his troops in motion, marching across the Tang Pass in the teeth of a blinding snow-storm, towards Gyangtse, one of the chief Tibetan towns. Preceded by mounted infantry (whom the Tibetan troops soon came heartily to dread) the long column wound its way down the barren valleys, past the advanced post at Tuna, and pulled up before Guru, where the Tibetans made a stand. The enemy had built a wall, but only partially across the valley, and it was the easiest thing in the world to outflank it and take them in the rear. They were so surprised at this operation that they allowed themselves to be herded together, and were being disarmed, when their general, in a

sudden fit of courage, or madness, or both, fired at a Sikh, and wounded him. This first shot not only started pandemonium, but it opened the Tibetan Campaign. The Tibetans, many of whom still possessed both swords and guns, suddenly turned on their Gurka and Sikh captors, and in the *mêlée* might have done much damage had they not been caught by rifle fire from both slopes of the valley. The fight was soon over. The enemy turned and fled, leaving many dead and wounded behind.

The expedition then moved slowly on to Gyangtse, with no more serious interruption than the discharge of a few ancient muzzle-loading cannon, weapons that were out of date even at the Battle of Waterloo. These *jingals* are fired at high angles, shooting a ball of lead about the size of a cricket-ball, and rarely hitting anything except the ground; indeed, when they go off, there is much more risk to the gunners from the explosion of the charge than to those for whom the missile is intended.

Gyangtse lies in a wide flat plain, between the inevitable steep hills. It is dominated by a large fort, placed on a hill rising out of the plain, and looking for all the world like the castles drawn by imaginative artists in fairy books. Wide steps lead up one side, being overlooked by strong defences; on the other sides the precipitous rock

is crowned by the castle walls. In the hands of real soldiers the place would have been a serious obstacle; but the Tibetans, discouraged by their losses at Guru, abandoned it. The British found there an immense quantity of stores, which they appropriated; but for some strange reason the desire not to hurt the Tibetans' feelings overcame military prudence, and the fort was not occupied. Instead, an armed camp was established less than a mile away, at Changlo, within easy range of the guns of the fort. All the Tibetan quarters being too verminous to sleep in, the officers throughout the campaign occupied tents.

This was in April. Negotiations were now renewed; but in the middle of them the Tibetans determined on a treacherous attack upon Changlo, with the idea of destroying the Mission entirely. The opportunity was favourable. Part of the British force had been sent on to occupy an important cross-road, the Karo Pass, and the great bulk of the troops were some way distant, with Macdonald. Only Younghusband and a handful of men remained in the armed camp.

The Tibetans had 1600 men. On the night of 4th May, half of them advanced silently upon the fort, which they occupied without resistance. The other half crept up to the wall of the camp, and were almost over it before a sentry saw them and fired. Then pandemonium broke loose.

Bullets ripped a way through the mud walls of the camp, the position of which was defined throughout the hours of darkness by a ring of fire. With remarkably slight losses the attack was beaten off, the enemy leaving 180 dead outside the walls, and carrying off their wounded.

There now ensued for Younghusband two anxious months of siege, or rather of investment, for he maintained daily communication with Macdonald, while the enemy even neglected to cut the telegraph wire. There were about two dozen of the ancient muzzle-loaders in the fort, with which a daily bombardment of the camp was maintained, though I believe not a single man was ever killed by it. This serio-comic warfare lasted until the General came up in June and relieved the Commissioner. The investment of Changlo had one advantage. It at last convinced the Home Government of the need for an advance to Lhasa.

In the meantime, Colonel Brander, with the bulk of the camp defenders, who had been absent when the night attack took place, had carried out one of the most extraordinary battles on record. The Karo Pass is some 16,000 feet above the sea. Commanding the roads to Lhasa, Gyangtse, and a third important town, it was vital that it should be kept clear. The Tibetans had built a stout granite wall across it, constructing openings whence

rifle fire could be directed upon any assailants; this wall stretched right up to the mountain sides, and was protected by strong earthworks.

Diverting the enemy's attention by the semblance of a frontal attack, Brander made his Gurkhas climb an extremely steep cliff and cross a glacier, somewhere about 18,000 feet above the sea; thus they were enabled to take the Tibetan defences in the rear, when of course, after a short fight, the whole position collapsed and the enemy fled.

With the arrival of summer, the Mission moved on from Gyangtse to the bank of the Brahmaputra, Macdonald systematically clearing out the Tibetans from every stronghold on the way. There was very little further fighting, and none at all after they crossed the river; but a constant succession of deputations from Lhasa arrived, dressed in all the colours of the rainbow, and begging Young-husband not to proceed, but of course without avail.

It took a week to cross the Brahmaputra; but the enemy had had the incredible stupidity to leave ferry boats there, and by their aid a communication was established across the broad, swirling stream. Some military boats that had been brought up by the expedition proved too light for the treacherous whirlpools; one of them upset, an accident in which Major Bretherton,

the principal transport officer, was unfortunately drowned.

The way to Lhasa lay round the foot of a glacier that fell from the flanks of a mighty peak, and then up a long winding pass; this was an ideal post for defence, and great preparations had been made to hold it, nevertheless it was abandoned to the English. They then came to a broad, flat valley, surrounded by steep hills. In the far distance, clearly visible above the scattered trees, stood a huge rock, on which a white mass soared boldly heavenwards, terminating in a roof of beaten gold. It was the Potala, the Great Palace, and the gateway of Lhasa. The holy city was in sight at last!

Those who rode on first encountered sullen, dirty, and nauseous monks, mostly clad in filthy red gowns. Lhasa itself proved to be an insignificant little town of flat-roofed one-storied houses, separated by unpaved streets in which pools of dirty water and piles of garbage had accumulated. In the midst of all this rose a splendid cathedral, with a golden roof. By far the most striking object was the Palace or Potala, which rose nearly 500 feet above the plain, and looked like a huge white prison, with its square windows and its long straight stairway of approach.

Now began the worst task of the Mission. The Dalai Lama and his Russian adviser had fled.

A Regent and three others formed the Council; but nothing could be decided without the monks, for nobody had any authority. The result was that for weeks interminable conversations went on. The same things had to be said over and over again; the same sentiments expressed; the same sort of wash, miscalled tea, drunk (it is a mixture of black tea, rancid butter, salt, and warm water, and is indispensable in Tibetan life); and the same wearisome efforts made to convince the Tibetans of the justice of the British claims.

Eventually, by combined firmness and patience, Younghusband won this campaign as completely as the troops had won theirs. The first British Resident, O'Connor, took up his post at Shigatse. The frontier was readjusted. Russian hopes receded, apparently for ever.

Although the prohibition to visit Lhasa was again instituted, Lhasa has been visited since by Europeans on a number of occasions. The old prejudices, however, fostered by the continuance of the monkish rule, are impossible to eradicate; but in other respects than admittance to the sacred city the Tibetans are now much more amenable to reason. They were also severely dealt with by the Chinese, whose authority had been nominal too long. The result of all this was that when Younghusband made representations before the Everest expeditions of 1921-4,

permission was freely granted to enter the country; and the abbot of the monastery nearest to the mountain even blessed the enterprise.

While in Lhasa, the British officers saw a good deal of its temples. Ornamented outside by whitewash and bold stripes of colour, their walls within are covered with designs of demons, dragons, and representations of Buddha. Every temple has its great idol, its rich ornaments, and its peculiar rows of candlesticks made of butter and wax, and burning butter; despite which the interior is always filthy, and usually gloomy.

Round the city runs a path, trodden level by the feet of countless pilgrims. This is the famous Lingkor, or Sacred Way; everybody who makes its circuit from left to right is thereby absolved from sin, or at least forgiven a good deal of it. In a city which holds more than 20,000 monks of intriguing mind and unclean manners, such a road seems highly necessary.

—From *Some Triumphs of Modern Exploration* by
B. Webster Smith.

In Indian Borderlands

Beyond the rain-soaked hills of Assam, with their tea plantations and their dense forests, lies a wild region of mountains intersected by deep, swift-flowing streams, where the forest knife alone makes travel possible, and where the roads are mere footpaths or worse, running up the faces of cliffs, and down the steepest clay slopes, with neither foothold nor handhold apart from the roots and branches of trees. This is the "Hills Country". By "hills" Indian geographers must be understood to mean mountains 6000 to 10,000 feet high, with sides at any angle up to the vertical.

Far to the south are the temples of Mandalay, with their rich colours and their curious architecture; far to the west the dusty plains of India teem with a hundred million human ants; but here, in seclusion, fear, and ignorance, dwell remote and savage tribes, many of the natives never having been farther in their lives than to the next village two or three miles away.

Numerous travellers have ventured on the

fringe of these lonely wilds, while the British have pushed roads and forts little by little into the important districts; but only a handful of men has ever crossed the ranges in their entirety, still more rarely has anyone ventured along the Himalayan watershed.

The headwaters of many rivers wander most intricately among the hills. Until fairly recent times it was by no means certain where even the principal streams began, for native opposition prevented any Europeans from ascending except by force, and force was strongly discouraged by the Indian Government. Native surveyors, using the same methods as we illustrated when we were looking at Tibet (see p. 26), had been employed to try to find the watershed, but their maps were merely approximate, and their information, based on memory (and often on hearsay), was not dependable in the case of rivers that had a habit of turning back upon themselves, and flowing out again in the most unlikely places. Thus, for very many years three problems about this region perplexed geographers. Let us glance at the solution of one of them.

The problems concerned the three rivers, Salwin, Irrawady, and Brahmaputra.

The Irrawady is the Great River of Burma. To anyone who views its wide expanse at Mandalay it seems incredible that such a large stream

should commence on the southern face of the Himalaya. The Brahmaputra, a broad, sprawling, and many-braided stream, splits into numerous large headwaters a short distance west of Sadiya. Two of these, the Dihang and Dibang, have an immediate interest for us, because one or the other of them was suspected to be the Upper Brahmaputra. The two most remote branches of the Irrawady—the Mali on the west, and the Nmai on the east, running parallel but with a 10,000-ft. ridge between—also ran back to an uncertain extent “into the hills”. Beyond the Nmai branch of the Irrawady is a high, narrow mountain chain, peopled by savage Lissu; and beyond that lies the continuous gorge of the Salwin. Another great ridge, another drop, and we come to the middle stretch of the Mekong. One more ridge, and we are in the gorge of the Yangtse-kiang. Nowhere else in the world will you find four great rivers like this, all within a span of eighty miles, and all flowing in the same direction, only to debouch into the sea at points many hundred miles from each other.

North of the Himalaya, explorers (using the methods which Littledale¹ was forced to employ) gradually identified the sources of one big stream after another. Here was the Yangtse; there the Mekong. The Salwin was more doubtful, and

¹ See page 28 ff.

although traced down to such a point that there is no reasonable doubt of its continuation in Burma, one stretch of it still remains untraversed. Of the Irrawady there was no trace. Far to the west, however, near the Karakoram Himalaya, rose a river, the Sanpo, which flowed east for at least 800 miles, past the valley up which Lhasa lies hidden, and towards a huge mountain knot, beyond which all was blank. According to some authors it crossed the mountains in great falls, emerging as the Upper Irrawady; according to others it formed the Upper Brahmaputra.

The probable solution of this problem was worked out by a succession of native explorers, who were sent in disguise from India. Many years ago the Pundit Nain Singh passed down the Sanpo to a spot thirty miles below the town of Tseting, but was then turned back; while in 1882 the Pundit A. K.,¹ at the close of four years' wanderings in Tibet, followed the watershed where the Irrawady ought to have been, but found no important stream there. Finally, another native, Kinthup, was sent north specially to solve this problem by casting marked logs in the river above the unknown stretch; they were watched for on the Brahmaputra, but were not identified. Meanwhile, Kinthup had pushed down the river to Pemakochung, where there is a fall thirty feet

¹ See page 27

high and a lamasery; below this he found an impassable gorge, which he went round in a great bend to the Abor country, on the Indian border. He was turned back by the Abors, was betrayed to the Tibetans, and was sold into slavery. Eventually he escaped, with nothing to show of his travels but what his memory retained.

From the facts related by Kinthup it was reasonably certain that the Sanpo and Brahmaputra were one, the connecting link being the upper Dihang; it was also clear that the river must fall 6000 feet in less than 100 miles, but whether any gigantic falls intervened was unknown. As the Dihang, almost from its mouth upwards, was long represented by a dotted line, owing to the hostility of the hill tribes (the Abors), Kinthup's solution of the problem remained unproven until three or four years before the Great War.

A very capable and popular frontier officer, Mr. Williamson, had for some years been cultivating the friendship of the wild tribes north of Sadiya. In the spring of 1911 he was invited by one of the Abor headmen to enter their country, and while there he was murdered. The result was a punitive expedition, which had important geographical consequences.

The Abor country is a most heart-breaking place. It affords nothing but one hill after

another. The roads are mere tracks, either spun out treacherously along the edge of the cliff, or passing up an absurdly steep hillside, to a crest across which one can almost sit astride, and with an equally steep drop on the other side. Although worn to some extent by the feet of the natives, it is covered with roots and creepers, which afford invaluable foothold and even handhold; in the steepest places ladders have to be used. In the bottoms of the hot valleys the track is more open, for there the savages cultivate small patches; everywhere else is the densest forest.

The whole country being seamed by water-courses, some means must be found of crossing the rivers; this is provided by cane bridges of peculiar construction. Some of them are quite masterpieces of engineering. They have three stout cables made of rattan canes, firmly attached to trees on both banks, and curving down at a very steep angle till they meet in the middle. Cross ties keep them in place, and the floor is made of ropework. Of course the canes give at every step, and the whole structure sways from side to side; nevertheless several people can cross at a time, and despite its appearance the bridge is perfectly safe. Far otherwise is the bridge which less skilful tribes build, and which may consist of one, or at best two cables working on the gravity plan, i.e. with the point of arrival on the far

bank much lower than that of departure. On these the traveller sits in a most precarious cage, with his back to the roaring river underneath, and, trusting to luck and his own skill, impels himself along backwards by pushing with his feet, with every likelihood that the greased runner attaching his support to the cable will stick fast at the most awkward moment.

The Abor punitive expedition made some small impression upon this country. It took place in 1912. Mule roads were built, and surveyors followed the river up to the Tibetan frontier, almost reaching a place called Kapu, 2610 feet above the sea, and close to a well-known lamasery. For several reasons it was unable to proceed farther. At this point Captain (now Colonel) F. M. Bailey comes on the scene.

Bailey was already well seasoned in Tibetan and frontier travel. He had been working during the previous year with a military mission among the Mishmis, a tribe occupying the upper Dibang, and even wilder and more isolated than the Abors, whose territory they adjoined on the east. Prior to that he had made a notable journey across Central Asia, and he was one of Younghusband's men in the Lhasa expedition. He had the admirable quality of easily establishing good terms with the Tibetans. In the adventure of tracing out the Dibang above Kapu he was accompanied by a

man whose tastes differed very little from his own: Captain Morshead, of the Indian Survey, a man of remarkable energy and courage. It was Morshead who did the preliminary mapping in 1921 which made the attack on Mount Everest possible, while he subsequently participated in that great adventure, being forced to retreat when severely frost-bitten (see pp. 115-128).

They had native coolies, inadequate supplies, abundant confidence in themselves, and some surveying instruments; and with this outfit they left Mipi, a village on the upper Dibang, on 16th May, 1913, to cross over two mighty passes down into the adjacent valley of the Dihang. It was the worst season of the year, and the monsoon had broken; consequently it rained every day, and the frightfully poor track, the slow marching of the coolies, the insatiable rapacity of the leeches (which are like black threads, and have a habit of dropping down one's neck off trees, and then gorging themselves on one's blood), the occasional swarms of mosquitoes and sand-flies, contributed to make a day's march anything but happy. On each of the two big passes the snow was thigh deep, and as it was raining hard, the ascent and descent had to be made through much of this treacherous slush, while snow avalanches lent a spice of extra danger to the work. Finally, however, they got down to Kapu;



PL. 8

COMMENCEMENT OF RAPIDS ON THE SANPO OR
UPPER BRAHMAPUTRA

By permission of Lt.-Col. F. M. Bailey (who took the photograph) and The Royal
Geographical Society, London

duly visited the Lamasery; sent a letter to the Abor Survey Party, in order that their own identity might be placed beyond suspicion, and then proceeded, during much of June, northwards up the hitherto untrodden part of the Dihang or Sanpo, as we will now call it. It was terrible work, for all the spurs of the mountain on which they stood, and through which the river roared in one tremendous gorge, without any falls, out of sight as a rule, but clearly to be heard, were separated by equally deep minor gorges; so that to travel one mile forward meant going 3000 feet up in the clouds, and down 3000 feet on the other side. One of these spurs was a mile high, with a slope of 45° . Nevertheless, they arrived at last at Lagung, a village in line with the east-west course of the Sanpo, and at the very apex of its bend. Here they wished to turn west, but a local official with whom they became friendly diverted them northwards, and they afterwards had to make a roundabout tour, coming on the Sanpo again above Pemakochung, i.e. in the stretch which Kinthup had described. Throughout this time, of course, Morshead steadily went on with his surveying; altitudes of streams were taken by boiling-point thermometer, and panoramas of the country were obtained whenever the vegetation was sufficiently open to enable anything to be seen. Down in the Sanpo valley,

however, it was dry and relatively warm, though cold by comparison with the plains of India.

They pushed down the valley for some way, but it rapidly became forested, and eventually there was no track, other than one used by wild animals; the river, too, ran faster and faster, until it was galloping in rapids between two gigantic peaks. That on the south, Namcha Barwa, 25,455 feet, had been known before; but that on the north bank, Gyala Peri, was a beautiful and hitherto unknown snow peak, 23,460 feet high. It was found impossible to get sufficient coolies and food together to continue; so the party broke up, Morshead continuing surveying towards the places they had passed, while Bailey, with one follower, tried to cut a way through the forest. Giant rhododendrons barred the way; higher up rose the serried rows of pines. Bears and other wild animals inhabited this forest, through which they had made a regular track, but it was exceedingly difficult for men. Fortunately, Bailey fell in with a party of natives who lived downstream, and who had been collecting honey. He went some way with them; but eventually they dodged off, camping beyond a cliff down which he had no way of getting. His food having given out, he was forced to return; and after many other wanderings in this quarter of Tibet, the two surveyors eventually found their way back

to India through Bhutan. The spot reached by Bailey was about fifty miles from Lagung; the course of the river in the intervening span was not open to much doubt, and it does not appear to contain any falls, but it still has to be traversed.

The middle stretch of the Salwin, which runs in a deep gorge with forbidding hills on either side, is a happy hunting-ground for murder and robbery, and although nominally subject to China it is in reality very independent. This is the home of the Lissu, tall, well-built savages, living in village communities, and divided significantly enough into the categories of Tame Lissu and Wild Lissu. The former are scattered along the left (east) bank of the river, and are largely dominated by Chinese influence; the latter have always displayed an uncompromising hostility to any efforts to penetrate their territory. They are armed with cumbersome swords and cross-bows, the arrows being tipped with aconite (a deadly poison), which grows wild by the roadside.

One incident will show you what manner of men are the wild Lissu.

In December, 1908, Dr. Brunhuber and Mr. Schmitz, two German travellers, started from Tengyueh, in Yunnan, to travel west to the Salwin, which they proposed to ascend. They succeeded in penetrating up the river for some distance, when they came to a village called O-ma-ti; here,

as usual, the lack of carriers held them up, and they drove a bargain with the local headman, who undertook the service, along with eleven of his tribe. The Lissu, however, had no intention of serving, for after going a short distance they dumped their loads on a sandbank, leaving the two travellers and their one Indian servant to their own devices. The Indian was sent back to the village to buy a fowl, and he noticed signs that hostility was intended, but the unsuspecting travellers laughed at this idea, and spent the night on the sandbank, hoping that the carriers would return on the morrow. Sure enough, the Lissu did appear next day; they were all armed with swords and spears, however, and this fact should have taught Brunhuber how to deal with them. He made the fatal mistake of allowing them to come near and to argue; each of the two travellers was surrounded; suddenly one man stabbed Schmitz with a spear, and in an instant both these unfortunate men were hacked to pieces. The Indian was captured, the goods looted, and the bodies of the travellers thrown into the stream. Subsequently, the Indian made good his escape, and a punitive expedition from China captured most of the brigands.

As to the upper Irrawady, the main branch of which is known as the Nmai River, much of this was first traversed by a European in the winter

of 1911-12, when Captain B. E. A. Pritchard made a very remarkable journey from Myitkyina to Sadiya, passing near the headwaters of the river. Pritchard had spent years in acquiring a knowledge of the native dialects.

Most of the route, though dotted every few miles by clusters of native huts, with their patches of fields, surrounded and looked down upon by the eternal forest, was entirely unknown; being represented on maps by a dotted line where the river was supposed to run. Accordingly, Pritchard took with him a native surveyor, so that mapping and pioneer journey might go hand in hand.

Myitkyina is a town above Bhamo, on the upper Irrawady; and the first few days' journey being still within the pale of civilization, passed uneventfully. They reached Hkrangkao, a village where Pritchard established a depôt, and had nothing more difficult to contend with than the inevitable up and down grades as they passed spurs leading to the river. As they proceeded, however, the spurs closed in, and the familiar aspect of northern Burma—up one roof side, and down another, the characteristic "road"—supervened. At Hkrangkao he decided to make a side trip to the Chengkaw Mountains, which frowned down upon him on the right, and formed the Salwin watershed. No sooner had this excursion

commenced than the porters deserted, and Pritchard and his surveyor, struggling to the tops of 10,000 feet "hills", found that they could see nothing because of the incessant rain and mist. The traveller here developed ulcerated chilblains, and after much suffering was forced to return to Hkrangkao, with the survey unfinished. His feet now became so bad that it was impossible to wear boots, but being of cheerful and determined spirit, he decided to go on, although for a month he had to walk barefooted over the rough native paths.

The track now hugged the river, which, usually invisible, ran like a millrace on their left hand. Only now and then they saw it far below, between the masses of trees and the extraordinary hills. Like all north Burma tracks, the route was overgrown and obstructed by fallen trees and bamboos, with dark gloomy tunnels between the overhanging rhododendrons and firs. The upper parts were so slippery that even the natives had to employ pointed bamboos, which they thrust into the muddy cliffs so as to get some sort of foothold. It rained morning, noon, and night, and the mist proved a constant hindrance to surveying, for from the hilltops, so often and so laboriously ascended, nothing could be seen but fog. The camp fires often went out. The leeches were plentiful and hungry. Under these con-

ditions the three or four miles per day which they achieved was satisfactory progress.

Throughout this part of the journey food was very scarce; the carriers, also, were reluctant to go farther than from one village to the next, which meant a constant succession of new men. However, they carried the loads cheaply enough "for six annas a day, or for a few brass buttons, blue beads, or other baubles". At one place hereabouts the party descended 3000 feet in $1\frac{1}{4}$ miles. Pritchard describes the people as "cunning, avaricious, untrustworthy, and excitable". They were hospitable, however, and good to their dogs. In one case he saw a Maru tribesman carry a dog across a stream, in order that it should not get wet. On the other hand, dogs form part of the menu when food is scarce. Nearly everyone smokes a pipe. The houses are built on piles, two to four feet above the ground.

They proceeded slowly, mostly in thunderstorms and rain, with occasional fine spells, during which the forest tops looked grand, with a background of high mountains. When the thunder burst, the peals rolled up the valleys like the sound of gunfire, the flashes of lightning lending the appearance of the discharge of artillery. At one place beyond Chelapta they were six hours in going four miles; the first two miles along bamboo poles fixed into the face of a cliff,

the last two through dense jungle grass, through which they burrowed like ants. On one stretch of this "road" Pritchard fell fifteen times in half a mile and "plunged literally headlong down the hillside". At another place they had to plant bamboos in front, and then to haul themselves up by their aid.

From the upper Nmai Pritchard turned westwards into Hkamti, a semi-civilized plain, where the British had an Agent, and where he had a temporary relief before tackling a patch of equally bad going on the Sadiya road. Rain poured down incessantly, and leeches were very bad. At one place he found fifteen of them in one boot, which was full of blood. Nevertheless, after all his trials were over, and he reached the railhead at Sadiya, Pritchard regretted having to leave the wild hills, the strange people and the nomad life of upper Burma. Unhappily, their fascination led to his death, for during the succeeding year (1913) he was drowned in the Taron River.

—From *Some Triumphs of Modern Exploration* by
B. Webster Smith.

Himalayan Peaks and Karakoram Glaciers

There are three kinds of peaks in the stupendous mountain ranges commonly called the Himalaya: those which can be climbed but are inaccessible, those which are accessible but cannot be climbed, and those which are neither accessible nor climbable. About 1100 summits exceed 20,000 feet in height; owing to their remoteness from human haunts many are identified simply by numbers, while many others have not been identified at all. The second highest mountain on the globe—K2—comes within the former category.

In this vast region, which is fully the length of India, all the world's best mountaineering talent has displayed its powers, from Sir Martin Conway to Mr. F. S. Smythe (not to mention the older experts, the Schlagintweits, the Stracheys, Montgomery, Graham, &c.); yet with the two exceptions of Kabru and Kamet not a single peak exceeding 24,000 feet has ever been conquered,

such is the difficulty of Himalayan mountaineering.

We must not only confine our attention to one or two limited districts, but we must also restrict it to a few outstanding achievements, otherwise we shall overflow our limits.

North of the beautiful hills and vales of Kashmir stands the vaguely defined Karakoram, a region of savage grandeur, almost untenanted by man, shunned by animals, and naked and barren to the last degree. Scores of summits shoot up into the deep blue sky, their sides like sheets of glass from polishing by countless avalanches, their tops splintery and sharp, or overhung by delicate but highly dangerous snow fringes. As a rule their bases sink into the eternal snows; for nearly every valley starts at a glacier's end and terminates either in another ice stream or in a madly leaping glacial torrent.

The few travellers who venture into this region of desolation and loneliness, where even firewood has to be carried from camp to camp, are forced to make an intimate acquaintance with the glaciers, for they are the natural highways. Five such ice streams far outmeasure all the rest, and four of them, lying in a zigzag line, afford a continuous depression between unscalable mountains for a distance equal to that between London and Sheffield. It was frequently rumoured that in past days, when the climate may have been a

little milder, they formed a route between the mountain villages; but if that were so—and it is by no means certain—then they cannot have been traversed very often. If one starts at the village of Hispar, in the west, and proceeds generally to the east, one has to mount the great Hispar Glacier, nearly forty miles long; at the top, more than 17,000 feet above the sea, is a wilderness of nearly flat snow, which forms the head of the second glacier, the Biafo. Following that down to its foot, and then traversing a small extent of barren glens, one comes to the base of the third of these remarkable ice streams, the Baltoro; one rises up its broad bosom for 36 miles, only to find oneself in a tremendous hollow, where peaks that are giants even in the Himalaya soar skywards in every quarter. Between these peaks are a few very difficult gaps, two of which lead to the head-streams of the largest glacier of all, the Siachen or Rose. Assuming that in such a journey one has escaped the innumerable dangers attendant upon it—that one has not been crushed to death by a giant stone falling from its icy pedestal, or smothered by an avalanche, or drowned in one of the slippery-sided trenches where rivulets run like mill streams, or engulfed in a deep blue chasm—an impression is brought away of stupendous forces ever at work destroying the mountains, carrying away the

countless angular fragments, and by the transport of cloudy silt building up the wheat fields and the orchards far below.

Thither, in the summer of 1892, went Mr. (now Sir) William Martin Conway, an archæologist, a geographer, and an alpinist who already possessed a great reputation. His object was to ascertain the reality or otherwise of the ancient route up the glaciers; and if, during the expedition, any opportunity occurred of climbing a few peaks four or five miles high, so much the better. He was accompanied by a few Europeans, including Lieut. C. G. Bruce, of the 5th Gurkha Rifles, and Mattias Zurbriggen, one of the most famous Swiss guides.

They had already had a foretaste of Himalayan conditions in a snowstorm of a week's duration and three unsuccessful climbs. The glaciers offered fewer difficulties, although not free from danger. Near the foot of the Hispar they had to cross a side gully. "We heard," says Sir Martin, "a sound like thunder, and saw advancing downwards at a great rate a huge black volume of mingled mud, water, and rocks, which filled the whole gully and was making for the river below. The rocks that formed the vanguard of this hideous thing were many of them as large as ten-foot cubes, and they were rolled round and round by the mud as though they had

been pebbles. In half an hour this mud avalanche had completely passed."

In such an expedition, where supplies of every kind had to be taken along, a large crowd of native porters or coolies was essential; and these men, not unnaturally frightened at the dangers confronting them, were a constant source of trouble and delay. Like all coolies, they desired to carry as little as possible, to start as late as possible, and to finish the day's march as early as possible.

Zurbriggen, who by nature was a strong-willed and sharp-tempered man, and spoke his mind freely to his employers or anybody else, handled them excellently. At the crossing of a dangerous pass, the coolies "kept on throwing down their loads and refusing to advance. Again and again he had to go down and help the men up one by one, which he did with the greatest kindness. The coolies fully realized the value of his help, and when all the difficulties were over, they fell on the ground and kissed his feet, saying that thenceforward they would follow wherever he chose to lead."

The thirty-seven-mile stretch of the Hispar Glacier necessitated six camps. The expedition then descended the equally long Biafo Glacier, the lower part of which is so completely hidden by frightful moraines that it looks like a stony

wilderness, the ice being wholly buried under the rocks and mud. The Biafo Glacier is almost crevasse-free, consequently the melting snow transforms the surface into slush, and through this the explorers had to force a way, knee-deep in mud.

Near the snout of the Biafo Glacier is the little high-level village of Askole; from this place the expedition proceeded up the third great ice stream, the Baltoro, at the head of which a wonderful collection of high peaks met their gaze. A branch glacier to the north led straight to the foot of the awe-inspiring precipices of K2, 28,250 feet; a giant whose huge pyramid made the lesser summits—themselves three to four miles high—seem mere pygmies. Near by were Broad Peak (27,133 feet), the Gasherbrums (26,000 feet), and Hidden Peak (26,470 feet). Still nearer, and blocking the head of the Baltoro Glacier, rose two other summits, not hitherto marked on any map; they were connected by a high gap or saddle, and their height was about 25,000 feet. The more northerly of these twins Conway named the Golden Throne, and he determined to attempt it.

As the front of the Golden Throne seemed quite unassailable, it was decided to work round to its rear. This necessitated four days of hard work on a tremendous ice-fall; at the end of

which three successive camps were pitched on the snowfields above, at 18,000, 19,000, and 20,000 feet above the sea respectively. From the last of these they attempted to climb their mountain; but after having got 3000 feet higher, and within some 300 feet of the top, found that they were not on the Golden Throne at all, but on an adjacent and much lower summit! They completed the climb, named the mountain Pioneer Peak, and prepared to try again, when an onset of bad weather, coupled with shortage of food, forced them to abandon the enterprise.

Apart from Graham's ascent of Kabru in 1883, this was the first climb of a mountain more than $3\frac{1}{2}$ miles high. Its achievement raises several questions which we must try to grasp before proceeding with our narrative. They all relate to the effect of great height on a climber, commonly known as mountain sickness.

At about the level of 12,000 or 15,000 feet many people, otherwise in perfect health, are apt to be attacked by nausea, sickness, and intense headache. I can vouch for the last-named from my own experience. It is as if a band of iron were being tightened around the temples until the sufferer can hardly bear any more; after a time, however (a few hours to two days), it passes off. Some people suffer much from shortness of breath and lassitude at the same height,

but others are not affected. When one ascends to four miles or more, practically everyone experiences the same symptoms, though not to the same degree. The pace becomes funereal. It is irritating even to move about, still more so to cook food and drive in tent pegs. One frequently stops and gasps; when after a rest the lungs have got more air, the complaint passes off until these organs once more feel the scarcity of air, when the whole process has to be gone through again. In the worst cases the sufferer wants to lie down and die, and nothing will relieve him but removal to a lower level. Without exception all climbers become slower and slower, and he is a good man who at more than four miles of height can climb 200 feet in an hour. These are the main difficulties in the way of ascending such peaks as Everest. What means have been employed to overcome them?

The first and most obvious means, the use of oxygen, is not universally approved; yet its need is clear to all. You can conceive the air at sea-level as comprising an immense number of minute globules, flexible as soap bubbles, and closely pressed together by the weight of the air above. If one ascends to, say, a mile or two miles, the weight of overlying air is enormously less; consequently the globules are subject to less pressure, and are able to expand. Thus when a man breathes

at sea-level he takes in, let us say, 10,000 globules of air at one breath; but at a height of 15,000 feet he might take in less than 5000, since each globule occupies a so much larger area. To overcome this difficulty oxygen cylinders have been invented, which contain the life-giving gas in concentrated form. They were first employed on the Everest Expeditions of 1922-4, Captain Finch being the greatest exponent of the method; but their weight—about 5 lb. each—was a serious disadvantage.¹

An alternative method of dealing with the shortage of oxygen is known as acclimatization. Some climbers believe that by staying up among the heights long enough, the body so adjusts itself to the conditions there that the lightness of the air ceases to be important; others, however, assert that the longer one stays at great levels the weaker one gets. There is never likely to be any agreement between these disputants, because both methods have produced great successes.

We can now return to our main theme, having at the back of our minds the thought that every climb above 19,000 feet involves gasping like a fish.

Passing over several subsequent explorations of the Karakoram glaciers, we come to another record climb, made nearly twenty years later by the Duke of the Abruzzi.

¹ See page 113 onwards.

The Duke had been nurtured in the atmosphere of mountains. The Alps were his playground. In 1895 he ascended the Matterhorn by a difficult route, accompanied by Norman Collie and A. F. Mummery. He had then gone to Alaska, where he had visited, seen and conquered Mount St. Elias, one of the noblest mountains in the world. Following an attack on the North Pole, in which his crew just passed Nansen's farthest, he had been attracted to Africa, where the mysterious Mountains of the Moon were baffling explorers and climbers alike. The Duke ascended the mountains and mapped them once for all. He was now, in 1910, seized with the truly royal ambition of conquering a real giant; and June of that year found him on the Baltoro Glacier, *en route* for K2.

A tremendously steep ridge rises from south-east of K2, almost bereft of snow, but affording a way that was at least free from avalanches; but one attempt at climbing this convinced the Duke that K2 was impossible. If such a mountain were to be ascended at all, tent platforms must be placed at intervals on the wall, just as they had been on the Matterhorn; but whereas the Swiss giant could be conquered by a single day's hard work, the Himalayan peak had 10,000 feet of precipice above the glacier at its foot, and by no means could one climb at more than half the pace possible at a lower altitude. The rocks were so bad,

moreover, that tents could only be got up by driving spikes into the mountain and fixing ropes for the porters; and there was not nearly sufficient time available for this.

Accordingly, K2 was abandoned; but before returning the Duke cast around for one among the many local giants which he might carry home in his bag.

His choice fell on the Bride Peak, a most beautiful snowy pyramid, standing in an angle at the head of the Baltoro Glacier, its front defended by a savage array of needles and ice-falls. It was linked by a high gap or saddle to Conway's Golden Throne; and by getting on this gap, a practicable jumping-off ground would be available. Despite deep snow, dangerous clefts, and killing winds, the thing was accomplished. Supplies, tents, and guides were perched on the icy wall between the two summits, 20,778 feet above the sea. From the saddle a ridge, sharp as a knife-edge, rose towards the summit of Bride Peak. An advanced camp was built on this, almost 1000 feet higher; and from that eyrie the Duke and three guides (the brothers Brocherel and J. Petigax) attempted the ascent. They had only attained 23,300 feet, however, when a violent snowstorm drove them back again; but the whole party clung to the saddle, determined not to be beaten without another effort.

At last, after five days' misery, the weather brightened sufficiently to make an attempt practicable. It was foggy, however, so that the ridge required the greatest care. Rising slowly but steadily, the Duke attained 24,600 feet above the sea, when the mist became so dense and the wind was so furious, that he was forced to stop. On one side the ridge sloped away at a steep angle into the abyss; on the other it actually overhung the abyss, being, in fact, a snow shelf. In this miserable plight, not daring to go on, not willing to go back, the Duke stuck there for two hours; but the weather never changed, and reluctantly he was forced to return. This ascent far surpassed anything achieved in altitude until the post-War attacks on Mount Everest.

A short distance south of the Hispar Glacier is another large system of ice rivers, mostly tributaries of the large Chogo Lungma Glacier, some thirty miles long and two to four miles wide. This region was thoroughly explored by Dr. and Mrs. Workman, whose six expeditions to the Himalaya resulted in some new mountaineering records, besides valuable additions to the maps.

On their first visit to the Chogo Lungma region, in 1902, they took a topographer, an Italian porter, 50 to 150 coolies, and the guide Zurbriggen.

Like most of the expeditions into this region, they started from Srinagar, the picturesque capital

of Kashmir; and after traversing the barren and rugged valleys of the Indus and several of its branches, they arrived at Arandu, a little mountain village of flat-roofed stone houses, where pigs and poultry herded with human beings, and where the bitter winds blew straight down off the surface of the Chogo Lungma Glacier.

At Arandu the final disposition of coolies was made, a long and vexatious job. The local headman acted as a general guide, besides accompanying them some miles up the glacier.

Immediately beyond Arandu, and seeming to threaten it with destruction every year, was a great mass of dirty rock fragments, mixed with ice, and subject to sudden slumps as portions rolled and slid down from the top. This was the terminal moraine of the glacier. Advancing at first along its side, and then down the centre of the ice, the party traversed some twenty miles by easy stages; the ice stream then made a sharp turn to the north, and in the angle between it and a minor glacier (the Haramosh) was a rocky promontory: from its general resemblance to a well-known Swiss feature, it was named the Riffelhorn. Despite the height of 14,000 feet, there was still some grass on the flatter places for the sheep and goats that had been driven up; rocks afforded a convenient home for the coolies; and tents were set up for the Europeans. This

camp formed their permanent base during the next month. It was not established without much labour in relaying the goods from Arandu; in addition to which, the junction of the two ice streams forced both of them into huge cubical masses; and the laden men had to scramble round and under these quaking columns, with the certainty of serious harm, or even a fatality, should the ice tumble down on them.

Up to this point the glacier, apart from its great size, had not differed in any way from other large ice streams. Its white surface was marked by chains of black rocky hillocks, composed of countless frost-riven fragments that were slowly but inexorably travelling on the ice to the glacier's snout. The explorer prefers even the risk of tumbling into crevasses to the wearisome walking on these moraine hills, where every step is a slide and the sharp jolts and wrenches strain both the temper and the ankles. The clean ice was diversified by the usual number of watercourses, lakelets, and sharp little pyramids, and by more than the usual number of quaking towers and pillars; towards its edges it was heavily crevassed. Apart from these difficulties, it was no joke to tramp over the icy thoroughfare day after day, at an altitude approaching that of Mont Blanc, and in a sun temperature of 180 to 190 degrees; for the ice, confined between steep mountain walls,

radiated the heat so fiercely that lips cracked and the skin blistered repeatedly, making conversation and the eating of solid food most painful.

From the Riffel camp the upper reaches of the glacier wound away towards a high snow basin, upon which terribly forbidding and unclimbable precipices frowned; and to the coolies, at least, there was a clear warning not to proceed farther, in the daily clouds of snow dust and rolling thunder which betokened avalanches. Early in August the four Europeans, together with fifty-five unwilling porters, set out to find a way through the dangerous maze of cubes and towers out on to the centre of the ice. For their own protection the natives were roped together in parties; but the ground soon became so bad that they were told to stand still, while the leaders went forward to prospect. While they were all hidden from one another by the columns of blue ice, an incipient mutiny brought Dr. Workman hurrying back to the main body. An agitator had taken advantage of the opportunity to alarm them. "The howling mass of humanity, some with loads, some without, were jumping about, gesticulating, pointing to their feet and up and down the glacier, while several, entirely beside themselves, were sprawling like frightened beetles prone upon the ice, frantically clawing it with hands and feet."

Eventually, however, they were got into a

better frame of mind; the agitator was placed at the head of the column, and the march was resumed. At length they got out of the bad patch, but the day was now far spent. A bare space was found in the vicinity of another maze of tottering ice towers; and here a camp of refuge was made, the slope being so steep that everything had to be propped up with stones. This camp was 15,096 feet above the sea.

Next day they ascended a mountain almost above their camp, by a terrible slope of soft shale, where every step forward meant a slide back. When they were right under the summit they found themselves confronted by an overhanging snow cornice; Zurbriggen cut a hole through this, and up the tunnel thus made all the party crawled. They named it Cornice Peak. It was only 17,800 feet high, but it gave them an admirable view to the north. They saw now that they were on a long narrow rib of rock, with the Chogo Lungma Glacier far below on their left, and a virtually enclosed ice basin (which they naturally named Basin Glacier) on their right. Cornice Peak was the first and lowest of four beautiful summits. Next to it on the ridge, and seemingly very difficult of access, was Mount Chogo (21,500 feet); then, after a gap, came Mount Lungma (22,568 feet); and lastly, there rose in the rear a noble mountain, which they

named Pyramid Peak (24,500 feet). It was decided to attempt all three, but persistent bad weather made this impossible until the succeeding year.

Sliding back down the shale to the camp, plans were made to complete the ascent of the glacier; and the party was soon involved in fresh wonderment at the marvellous awkwardness with which ice can break. Next day, taking sixteen lightly loaded coolies and a sledge, they trusted themselves once more to the labyrinth of hillocks, towers, and ditches; and after safely pulling the sledge up on to level ice, soon found that article to be useless, for it stuck in the snow repeatedly, and required the entire energies of the men to move it. Soon they were in a great ice basin, more than 17,000 feet high; the sun poured down upon them like the heat from an open furnace; trudging through the deep soft snow became more and more wearisome, while the hateful glare burned their hands and faces. At 3 p.m. the coolies struck work; accordingly, camp was pitched in the middle of the basin, as far as possible from the incessant avalanches.

Next day, while the coolies rested, the whites pushed on over heaps of snow and along the edges of bottomless blue clefts to the head of the glacier, 19,000 feet above the sea. Finally an ice wall, scarred by ugly clefts and diversified by

masses of tumbled blocks, pulled them up completely; it rose above them for 800 to 1000 feet, to a gap between high summits. At all costs they were determined to see what lay beyond the gap, but this would be possible only if they could attack the ice wall during the early hours, before the sun had rendered its surface too deadly. It was therefore necessary to go back once more, and bully or argue the coolies into bringing up a tent.

After some arguing with the men, the march was resumed. Wearily plodding along, the coolies refused to realize the danger in which their own slowness placed them, from the beautiful but dangerous cornices that festooned every peak; let one of those frail things of translucent ice fall, and what might it not start in its downward path! One particularly dangerous place had only been cleared a few moments by the last lagging man, when "we saw what seemed to be the whole mountain-side in motion. The huge curling cornice that had graced its brow and caused our fears had broken loose. Vast masses of snow and ice were sliding downwards, rolling over one another, leaping through the air and smashing themselves against the rocks, with hissings, growlings, and crashings, as if all the demons of the infernal regions were venting their wrath on that wall. . . . As the mass struck the glacier it

seemed to hesitate a moment, then, gathering head with a high seething front at least half a mile wide, it shot across the glacier regardless of undulations and gradients, with a roar such as might be produced by fifty railway trains running abreast at high speed, leaving in its path a chaos that must be seen to be appreciated."

They were not destined to climb the wall, after all. Camp was pitched in a fog at the glacier's head. Next morning the barometer fell, and to avoid being caught by a storm in that ugly place they retreated to the refuge camp, literally feeling their way through the mist. It was snowing before the tents were up, and once inside the canvas they had to stay there, while a storm of sixty hours' duration wore itself out. They were without hot food and were acutely uncomfortable; scarcely able to hear each other between the mad flapping of the tents and the howling of the gale. Afterwards they retreated to the Riffel camp.

Another piece of work from the base led to an even worse experience. The enclosed glacier—Basin Glacier—which had been seen from Cornice Peak would have to be examined before any ascent could be made of the three more distant summits. It was only 1 mile wide and $7\frac{3}{4}$ miles long, and it lay in a deep hole where it collected all the heat from the fierce noonday sun, causing acute discomfort to everybody.

They fixed their tents at its head, surrounded by gaping clefts on three sides; all around were the sheer cliffs of great mountains, except at one point, where two small gaps occurred high up on a treacherous ice-glazed precipice. In order to learn more about the topography they decided to attempt the scaling of this wall, but the crevasses were so numerous that they did not dare to start next morning without the aid of daylight.

Clambering over a wilderness of sharp blocks brought down by avalanches, and tumbling waist-high into the snow-filled hollows between them, Zurbriggen, Dr. and Mrs. Workman, and the porter at length reached the edge of a great crevasse bounding the glacier on one side and the wall of the two gaps on the other. The way across was by a snow bridge of doubtful strength; once on the far side, ice rose straight before them to the gaps at an angle of 60 degrees. Fortunately this precipice was broken at one or two places by projecting rocks, up to which they cut their way, the leader's ice-axe ringing on the wall while the others tried to balance themselves against the keen morning wind. Two hours of this work only carried them half-way up; the last of the friendly rough patches had been passed; the nearer of the two gaps could not possibly be tried, because of the fear of snow slipping, and to make a traverse across to the other involved

grave and obvious risks. For the present they were in shade; but soon the sun, wheeling overhead, would pour his burning rays upon them, and would melt the snow crust upon which they stood, and the slipping of that might kill them all. Nothing was said. The lady faced the situation calmly and resolutely; so they went on. Another hour and a half brought them up to a patch of high rocks between the two gaps. It was crumbling away; and even if it had been solid they were denied the use of it, for a crack—sometimes only a few inches wide, sometimes several feet—extended between the icy wall and the cliff. The edge by that crack was itself crumbling and frequently broke away; but along it they had to go. Meanwhile the sun began to glare down upon them, its rays coming off the rocks above like warmth from a grate. Only one person moved at a time, the guide taking every chance of placing his axe firmly, as a precaution against a slip. Finally at 1 p.m. they reached the gap, only to find it little wider than the spider's thread along which they had just come, and with an abyss on the far side worse than the one behind them. The altitude was 19,260 feet.

A hurried bite, a drink, and they faced the still more dangerous ordeal of turning round and retreating to their green tents, which looked mere specks 2000 feet below. The sun had now done

its work and their feet sank into the snow, sometimes to the ankle; slips were not infrequent, but nobody overbalanced. In the middle of this gymnastic performance on a precipice, with the thermometer at nearly 200 degrees, the brave Zurbriggen faltered for a moment. "We cannot get down to-day" he said; thinking, of course, that after sunset the refreezing would make the thing easier. But they had to get down or die. Mrs. Workman summed up the position admirably. "No shelter of any kind was to be found on that wall. There was not a place where one could sit down to rest. We should be obliged to stand in the narrow steps on which our feet rested till we dropped from fatigue, which would mean a slide of nearly 2000 feet down the avalanche-gullied ice slope into eternity. Could we manage to stand there we should be frozen stiff in our tracks before morning, as the temperature would drop to zero."

Therefore they went on. The lady shall continue the story.

"Shortly after this the porter, who was second in the line, lost his footing completely, and dangled helplessly on the rope. Zurbriggen, who was last and somewhat above, having his axe secure in a narrow crevasse and the rope round it, was able to hold firmly, while the other two, though by no means securely placed, by the aid of their

axes prevented themselves from being pulled off."

The porter, thus supported, regained his feet. After this they went down more carefully than ever. When they came to the rocks which had proved of such assistance on the way up, they decided to abandon the old tracks as being too dangerous. As a rule climbers go down a cliff face outwards; but in this emergency it was necessary to turn about. They cut a way straight down to the great crevasse, faces to the wall, and gingerly treading in the porter's steps; Zurbriggen, who went last, had the fearful responsibility of holding all, should another slip occur.

The descent had now taken so long that the danger was passing. In the cooler hours of evening they reached the crevasse, and boldly sprang off where it overhung, landing in the deep snow below. They were safe!

Soon after this exciting episode the season of 1902 ended. When Dr. and Mrs. Workman revisited the Chogo Lungma in 1903, they were favoured with a few fine days between a succession of heavy snowstorms; and advantage was taken of this rare opportunity to climb two of the three summits beyond Cornice Peak, and to reach a great level on the third.

All three of the peaks descend to the edge of Basin Glacier in curves almost as steep as a cut

through a cheese; but by clambering up a difficult wall between the first of them (Mount Chogo) and Cornice Peak, it became possible to take the summits one after the other on the same day. This necessitated getting the coolies up to a camp at 19,500 feet, itself a great achievement in those days. By her conquest of the second peak (Mount Lungma, 22,568 feet) Mrs. Workman added to her reputation, already great, and surpassed by far the altitude record of any other lady. When we consider the discomforts attending every operation at nearly $4\frac{1}{2}$ miles above the sea—the exposure to alternate baking and freezing, the impossibility of getting proper sleep, the mechanical difficulties of climbing and snow trudging, and the nerve requisite to stand on a knife-edge, with glissades down to eternity on both sides as the certain result of a single slip, we know not which to admire the most, her courage, her will-power, or her physical endurance. This, moreover, was not all. In a later expedition to the Nun Kun group, an isolated nest of high summits east of Srinagar, she ascended the difficult Pinnacle Peak, 23,300 feet, and thus put the seal on her fame as a mountaineer.

We must now hurry away to the south-east, to the Kumaon and Garhwal Himalaya, a region which has always had a strange fascination for the native mind. Drained by the headwaters of

the sacred Ganges, the terrible defiles, with their flimsy rope bridges, atrocious mule tracks, beasts of the jungle, and densely massed trees and undergrowth, have been trodden by the feet of countless devout pilgrims. The mountains themselves, which are seen as often as not through a beautiful framework of pine needles, or round the corners of giant rhododendron trees, or from behind a mass of glorious wild roses, have a steepness and visual height not found elsewhere. Nanda Devi, the Abode of Snow, and Nanga Parbat, the Naked Mountain, have defied the best efforts of trained alpinists, not merely to climb them, but often even to reach their lower slopes. Gangotri, Trisul, Kamet, Dunagiri, and other giants are more accessible; yet from the dawn of the nineteenth century, when Moorcroft, Fraser, and Webb penetrated these wilds, to the year 1930, the only major mountain to succumb was Trisul.

In June, 1883, a very energetic and capable young alpinist, Mr. W. W. Graham, who had gone to India in search of something really difficult to climb, paid a visit to this region. With him were two first-class guides, Emil Boss and Ulrich Kaufmann, besides M. de Décle, a French Alpine Club member, and a select band of coolies.

At first they decided to attempt Nanda Devi.

The "road" was cut through gorges, down among loose rocks, over planks supported on pegs, with a torrent boiling away beneath, and through patches of dense bush where nothing but the knife could force a way; and it proved so continuously bad that de Décle gave up, exhausted. The others persevered; stumbling over the water-filled holes in the track, worn out with helping the coolies up and down cliffs, and annoyed to madness by the curse of that region, the black, thread-like leeches, they came at last to a complete halt. At this point the track ended in a precipice 500 feet high. Even the alpinists could find no way down its polished surface; and a retreat was ordered.

They next attacked Dunagiri, a noble mountain more than 23,000 feet high; but by the time they had reached its glaciers most of the food had gone. Accordingly, the coolies were paid off, and the Europeans attempted the ascent alone. They had first to mount a ridge for several thousand feet, an exhausting process at best, but doubly so in the stifling heat; at the top Kaufmann was so weak that he had to stop, but Boss and Graham went on. Above them an ice wall rose steeply into the gathering mist; and while they were cutting steps up it (Boss leading and notching the ice, while Graham enlarged the holes), the cold wreaths came down and almost hid them from each other.

When they were less than 500 feet from the top it began to hail. Every step was now more treacherous than before, and so much time had already been expended that a night up there seemed certain. Fairly and squarely beaten, they turned and crawled down again to Kaufmann, and three miserable figures, reaching the glacier again in darkness, spent a never-to-be-forgotten night there, without matches, food, or dry clothing.

After this defeat Graham made another attempt to get to Nanda Devi; but first fourteen out of his twenty coolies bolted, and then, when he had fought his way to within measurable distance of the mountain, the rest followed suit. The track through the gorges had been even worse than their initial effort; four days of awful toil yielded but twenty miles. "In many places," said the leader, "it was only by holding on for dear life and using the rope that we could get on at all." At last they were completely stopped by a torrent, when nothing else separated them from the Nanda Devi glacier. Two efforts to bridge it with trees failed, the trunks being "whirled away like straws". Then the rest of the coolies deserted, and retreat became inevitable.

Early in 1907 another party of mountaineers gathered together in India, with the modest intention of climbing Mount Everest, to celebrate the jubilee of the Alpine Club. They included

Major C. G. Bruce, who had been with Conway on the Hispar crossing, Mr. A. L. Mumm, and Dr. T. G. Longstaff, whose training for the Himalaya had (as in so many other cases) taken place in the Alps and the Caucasus.

The Indian Government has suffered from the delusion, once or twice in its history, that information of use to foreign powers might be disclosed by any exploration of the virtually impassable gorges of Sikkim and Nepal; and although it had (rather unwillingly) dispatched the famous Younghusband Mission to Lhasa only four years before, with some slaughter and much upsetting of Tibetan mentality,¹ such a shock to the Tibetans as an ascent of a mountain could not possibly be permitted. Therefore the Indian Government, in one of those polite but icy documents which begins "Sir" and ends "Your obedient servant", refused to allow the Longstaff party to go anywhere near Mount Everest.

Accordingly, the alpinists went to Garhwal, took a look at Nanda Devi (to which, by extreme efforts, they got very slightly nearer than Graham had done twenty-four years before), and decided to try something easier. By dint of crossing numerous ravines, the nature of which can now be understood without further description, they found themselves at the bottom of the Trisuli

¹ See page 44

valley, looking south at a triple-crowned snow peak, Trisul.

Although rising clear above its neighbours, this beautiful mountain presents no difficulty to an expert other than its height of 23,406 feet, but the wind—always an incalculable factor—proved a severe handicap. Bruce had been injured in getting through the gorges; and the party which made the first attempt comprised Longstaff, Mumm, the two Brocherels (the same guides who established an altitude record with the Duke of the Abruzzi, p. 81), and Karbir, a plucky Gurkha N.C.O., who persisted in going despite a frost-bitten foot. After a trudge up easy slopes through deep snow, a camp was made on an exposed plateau at 20,000 feet. Success on the morrow seemed certain. Then the wind took a hand, coupled with a snowstorm; and after two days' imprisonment there they were glad to retire to a sheltered clump of junipers at 15,000 feet. Longstaff then determined to try to rush the peak; and early on the 12th he, together with Karbir and the two guides, successfully accomplished it. Mumm had to remain below, being unwell. This ascent surpassed Dr. Workman's best by a few feet.

Nearly fifty miles due north of Trisul, and right upon the frontier, stands the second greatest mountain in the British Empire, Kamet (25,443 feet).

After their success with Trisul the Longstaff-

Mumm party determined to attempt this giant also, but it was not to be slain so easily. They had to contend with mists and storms; they had no clear knowledge of the local geography; and after sighting the peak and climbing up to a great altitude towards it (more than 20,000 feet), they found that an impassable glacier-filled gulf lay between them and the grim red precipices of Kamet. The glacier itself was narrow and was overhung by ice-fringed walls; any party venturing upon it (at least in July or later) stood every chance of extermination by an avalanche. Under these circumstances the project had to be abandoned.

Another notable attempt upon Kamet was made in 1914, by Mr. C. A. Meade. Between the great mountain and a lesser but still considerable height to the east lay a snowy gap; and here, after great efforts, Mr. Meade got up a tent and spent the night. The altitude was 23,500 feet. Next day they were unable to continue, and a splendid chance of conquering Kamet was lost.

Before the Great War Dr. A. M. Kellas, a teacher of chemistry in a London hospital school, who was deeply interested in the question of climbing high peaks and its effect upon human beings, made several important Himalayan expeditions. He then confined his attentions mainly to the Kangchenjunga country, however,

producing by far the best map yet made of that region, and ascending some very high summits, including Pawhunri (23,180 feet).

After the War, the question of attempting Mount Everest again became prominent. Providence (in the shape of official sanction) blessed the scheme, and while reconnaissances were going forward, and committees of various kinds were devising ways and means of attacking the monarch of mountains, Dr. Kellas undertook to study the effect of artificial aids on man at high levels. Although not in good health and more than fifty years old, he went to India to carry out a series of tests. Climbers were to ascend a given distance, unencumbered. They were then to repeat the performance carrying cylinders of oxygen, which they would require on the journey. A third traverse of the same ground would be made with rubber bags containing a solution of caustic soda. Blood tests, the counting of heart beats, and other experiments were also to be made.

Dr. Kellas selected Kamet for this work. By the aid of a large body of coolies supplies were got up to its base, after which high camps were established at 21,000 and 22,000 feet. On 21st September, 1920, he and his assistant, Major Morshead, started from the highest camp with three coolies, intending to scale the peak from the north-east. On its southern side was a succession

of enormous cliffs, with a clear drop of more than a mile and a half; but by reaching Meade's gap they hoped to find a fairly easy mode of conquering the remaining 2000 feet. The gap was at the top of one of those icy walls which we have already met several times, beneath which lay tumbled rocks or scree; on the ice, steps had of course to be cut, and when at last they surmounted the gap, the coolies refused to go on. Thus another promising chance of ascending Kamet came to naught.

The results of the tests were valuable, however. Kellas and Morshead stood the rare air better than their men, who were not a picked crowd. As to the oxygen apparatus, it was a complete failure. A single cylinder of gas weighed nearly 20 lb., and in every case men climbed better without it; this was the result of the weight only, however, for much lighter cylinders were a partial success in the Everest expeditions. The soda bags apparently made no difference whatever in the rate of progress.

The subsequent history of the Everest expeditions is detailed in the section of this book beginning on p. 107. Dr. Kellas, who accompanied the first of them, suddenly died of heart failure at Kampa Dzong, *en route* for the mountain, and he was buried there, in the most appropriate setting for such an outstanding mountaineer.

After various parties had made nine fruitless attempts on Kamet, there approached it at last a mountaineer who enjoyed not only the benefit of the experience gained by others, but also the advantages of a new method.

Mr. F. S. Smythe, who had already acquired a high reputation as a bold climber in the Alps, and had participated in the extended Dyrenfurth attack on Kangchenjunga, decided during the early summer of 1931, to try Kamet. He had five white companions, Messrs. Beauman, Birnie, Greene, Holdsworth, and Shipton, besides the usual army of carriers. The new mode of war was to wear the enemy out. A camp was to be made as near to the Meade Gap as practicable, with a month's provisions; and the climbers were prepared to suffer all the discomforts of residing continuously up there until a favourable chance arose of scaling the peak. As it happened, the need for a protracted stay did not arise.

At the beginning of June they ventured up the dangerous Kamet glacier, a step which might have been impossible one month later. Three camps were then established, the highest at 20,600 feet; at the latter one month's food and fuel were placed. A still higher camp was made at the foot of the Meade Gap, 22,000 feet, and by fixing ropes to the mountain-side, laden coolies were enabled to mount thus far.

From this point the leader, with Holdsworth, Shipton, and a native, started on 20th June, followed the track of Kellas up to the gap, but pitched their tents just beneath it. On the succeeding morning they started for the summit, which they reached in $8\frac{1}{2}$ hours, mostly wearisome plodding through deep soft snow. Towards the top, where steps had to be cut in ice, the angle grew steeper, and the rate of progress dropped to 100 feet per hour. Despite the physical obstacles and the bitter cold, Smythe managed to get his cinematograph camera up to the very summit, thus obtaining a unique record of the climb. They descended safely, but were much hampered by cold, most of them being frost-bitten. Two days later Birnie and Dr. Greene also completed the ascent. Thus was Kamet vanquished after a siege of nearly thirty years.

—From *Pioneers of Mountaineering* by B. Webster Smith.

The Attack on Mount Everest

To men of any spirit the opposition of Nature constitutes a challenge which cannot be ignored. The sense of battle rouses a fierce joy in them, and the very idea of impossibility is foreign to their natures. This spirit taught men to fly, regardless of the laws of gravity. It taught them to rush along the ground at the rate of five miles in a minute. It taught them to rise ten miles into the air, and to jump down through thousands of feet of space aided by nothing better than a parachute.

The same spirit actuates mountain climbers. No sooner do they perceive a peak than they must climb it. Although there are good scientific reasons for climbing mountains, they are not very strong ones; the *moral* reasons are far stronger. It is a noble thing to endeavour to surmount difficulties and to penetrate into realms where ordinary men dare not venture. The risks, always great, are proportionate to the enterprise. How great they may be when climbing the greatest of mountains will be illustrated by this narrative of

the attack on Mount Everest in 1921, 1922, 1924, 1933, and 1936.

Besides being a good explorer in the ordinary sense, a scientific mountaineer must be something else. He must have an eye that quails not when contemplating a drop of thousands of feet, sheer from the precipice on whose edge he stands, and he must be sure of his limbs when the same nerve-shaking view becomes discernible from between his legs. It requires much self-reliance to scramble round an overhanging rock when hands and knees alone can be used, and one's feet dangle in mid-air; while an equal degree of confidence in one's companions is needed when, roped together, three or four men cross a dangerous glacier, for a single slip may result in the death of all. Watchfulness is another essential quality. Mists often arise with wonderful suddenness, leaving one practically blinded—perhaps upon the edge of an abyss; and the rolling stones that precede an avalanche, the distant roar that may betoken the bursting of an ice-dam, and the flooding of one's road, not to mention the yielding of the treacherous snow-bridge upon which, heart in mouth, one crawls across a yawning crevice: all these things call for incessant alertness.

Finally, the taking of observations, the mapping of prominent points, and even the ordinary

routine of cooking, eating, and sleeping are just as difficult at high altitudes as they are in the paralysing cold of the Antarctic.

Adventurous mountaineers have climbed the Alps from end to end. Chimborazo and Aconcagua, the greatest summits of the Andes; Mt. McKinley, the highest spot in North America; the solitary peaks of Kenya and Kilimanjaro, the culminating points of Africa: have all been ascended. Even the smoking but ice-bordered Erebus, in Antarctica, has succumbed to man's ardour and energy.

The Himalaya Mountains, however, are so vast that, although frequently attacked, their thousand summits are still nearly all unscaled. As recently as 1920 Mount Everest, although known for three-quarters of a century, had been seen only from fifty to a hundred miles away. It is a huge pyramidal peak, 29,140 feet high, which dwarfs everything in the vicinity. The natives call it the Abode of the Goddess, and political considerations ordained that until the last few years that splendid shrine should remain undefiled by the presence of man.

This immunity of the world's highest mountain was not due to any lack of British enterprise or curiosity, but solely to the fact that Everest is in Tibet, and, as we saw in an earlier chapter, our relations with that country, with its parent China,

and with Russia, would not permit an earlier attempt.

Meanwhile surveyors, travellers, and sportsmen, hastening away from the burning plains of India and the fever-haunted jungles of the foothills, had expended their energies in other parts of the Himalaya, especially in the Karakoram, at the western end. It is in high mountains that Nature is driven to her last and most savage fastnesses, and the higher one goes the greater is her resistance. Thus any climb above 20,000 feet was notable, while to camp for the night at such a height was regarded as the acme of discomfort. Above this point the risk of terrific avalanches, the very great steepness of the slopes, the fierce burning caused by the sun's ultra-violet rays through the thin air, and, worst of all, the biting winds, rendered farther advance most difficult. Nevertheless, man mastered the altitude problem bit by bit, just as he has mastered so many other things by concentrated effort.

A famous climber, Dr. Longstaff, climbed a peak (Trisul) that was 23,400 feet high, and had actually reached 24,000 feet on another mountain, when he and his party were all swept down by an avalanche, and preserved from destruction only by a miracle. Dr. Workman also attained 23,400 feet, while his gallant wife in another ascent reached a height never braved before by

any lady. An officer of the Indian Survey, Mr. Meade, actually made a camp at 23,500 feet. Finally, the Duke of the Abruzzi, an Italian prince who was the very embodiment of adventure, climbed up the massive Bride Peak to 24,600 feet, and was kept from reaching the summit only by bad weather. Up to the time of the first three Everest expeditions this was the record.

Several times, before the Great War, Sir Francis Younghusband, of Tibetan fame,¹ and General C. G. Bruce, a very experienced mountaineer, had thought of climbing Mt. Everest, but they were always stopped by the Government. After the War, however, a favourable opportunity arose. Two great societies, the Alpine Club and the Royal Geographical Society, found a large sum of money, and Colonel Howard Bury went to India, at his own expense, on the very difficult and delicate task of getting permission to ascend the mountain. He was successful. Application was made by the Indian Government to the Dalai Lama, the religious ruler of Tibet, and permission was granted for the expedition to enter Tibet. Thus was the first obstacle surmounted.

Meantime a strong committee was formed to consider the best way of going to work. Everest is no ordinary mountain, and is, in fact, so much higher than those hitherto climbed, that the ordi-

¹ See page 44

nary mode of proceeding, by a small determined party, would be foredoomed to failure. The air, which has a pressure of about thirty inches at sea-level, gets less and less as one ascends; at 15,000 feet it is only about half as great; and from this height to that of Mount Everest (29,140 feet) it continues slightly to diminish. This rarefaction of the air at high altitudes has a curious effect, for the most energetic men are so severely attacked by lassitude as to be capable of exertion only by strong will-power, while the loss of oxygen makes it needful to gasp for breath at every few steps. Climbing becomes slower and slower; thus the Duke of the Abruzzi, when near the end of his great Himalayan effort, could rise only 160 feet vertically in an hour. This fact, and a little arithmetic, shows us that one could not possibly hope to climb Everest in a single day, even from a camp at 20,000 feet. It would be absolutely necessary to make camps, one above another, wherever opportunity offered on the sides of the peak. Moreover, the mere effort of making a camp causes great exhaustion at such heights, and as the climbers would need every ounce of strength if they were to stand any chance of getting to the top, it was considered wise that all the many things which must be carried up from level to level should be carried by porters; and this meant a large organization, with an expert in

charge at the base, and another to supervise the passing up of the goods. Finally, experiments were made, in special rooms, upon an actual climber, to study the effect of the lack of oxygen, and to see if the administration of pure oxygen in small doses would assist him. The idea seemed sound, and many cylinders of oxygen were taken. They were undoubtedly very useful, but they were much too heavy, as they weighed 5 lb. each—a severe handicap to an almost exhausted man.

Younghusband and Bruce were again the sponsors of the expedition. They were assisted by Dr. Longstaff, whom I mentioned earlier;¹ by Dr. Kellas, whose five previous expeditions to great heights in the Himalaya gave his presence a special weight; by Colonel Howard Bury, Dr. Harold Raeburn (chief of the climbing party), and several picked officers of the Indian Survey, and members of the Alpine Club. Applications to join were received from all parts of the world, but the expedition was British throughout.

Every man engaged had to be absolutely physically fit, for high altitudes find out any weak spot in one's armour. A peculiar affliction is mountain sickness. Having only reached the modest level of 16,000 feet myself, and with no worse experience than a headache, I cannot say

¹ On page 100

much about this, but I know people who have had the most disagreeable symptoms. Mountain sickness, in fact, can prostrate a man, but it does not affect everybody, and will incapacitate some members of a party although not affecting others who are exposed at the same time. The Everest expeditions fortunately had very little of it, except once or twice amongst their carriers.

The selection of the men, the estimating of supplies, the purchase of animals, and the packing of stores in small, readily available parcels, all took much time and careful thought. This work fell mainly on General Bruce and Colonel Howard Bury.

Next, as Dr. Longstaff had pointed out, it was necessary to *find* the mountain. The peak of the huge mass was sufficiently well known from a distance; but around it lay a zone, fifty miles wide, of deep gorges, rushing torrents, glaciers, and minor mountains, all completely unexplored. Accordingly the year 1921 was wisely devoted to reconnoitring the ground. The season during which actual climbing might be possible comprised little more than a month, and Everest was certainly not assailable at more than one or two points, if at all.

Howard Bury led the reconnaissance. Drs. Raeburn and Kellas, with Mr. G. L. Mallory—of whom more later—and Mr. Bullock, formed

the climbing party. Major Wheeler, who had done much splendid surveying in the wildest Rocky Mountains, was to make a map, aided by Major Morshead. Dr. A. F. R. Wollaston was doctor and naturalist. Dr. Heron was to study the geology.

They started from Darjiling, a town in the North Indian hills, 7300 feet up, and reached by a wonderful railway. The main party, with fifty mules and their attendants, besides twenty-two picked porters, left on 18th May; another fifty mules followed on the 19th.

The start was not auspicious. Knowing the bad conditions to be expected, the very best Government mules obtainable had been procured, but they were so fat and well fed that they were not able to stand up to the hardships, and their breakdown a few days after starting caused some delay and confusion until hardier beasts were bought.

Incessant rain greeted the expedition in the hot, fetid, and vegetation-choked Teesta valley; nor did these conditions cease until they crossed the Jelep Pass into Tibet, and, on descending the valley of the Chumbi River to the north, encountered a colder and drier climate. Now beautiful masses of rhododendrons of many kinds bordered the path; in the meadows were countless purple, white, and yellow primroses; the dense woods

gave place to more open country; and the inhabitants, although curious and indescribably dirty, were not unfriendly. The powerful mandate of the Dalai Lama ensured for them a good reception at the numerous monasteries, an important matter in this priest-ridden country. That dreadful disease, dysentery, however, seized several members of the expedition before they had been very long on Tibet; Dr. Raeburn, the chief climber, became ill; and, to crown all, Dr. Kellas suddenly collapsed from heart failure, and died at Kampa Dzong, only ninety miles across the frontier. He was buried there, with great solemnity, in sight of the mountains he had loved so well. The leadership of the mountain party then devolved upon Mallory.

The route to Everest described a great curve round its eastern and northern sides, nearly two hundred miles in length. The most obvious line of approach lay up one or other of the gorges which carried ice-cold water away from the glaciers at the foot of the mountain; but these streams had slopes so severe that it was almost impossible to climb them. Consequently the indirect route through populated country farther north proved in the end to be both easiest and quickest.

By travelling thus, however, they had to run the gauntlet of Tibetan hospitality; to pay ceremonial visits to Lamas; to endure the inquisitive

obstruction of the populace; and to drink ceremonial tea, a nauseating mixture of coarse tea, water, rancid butter, and salt which we have already mentioned (p. 55). The beginning of June brought the warm wet monsoon wind, the streams on the plateau were flooded, and the mountain and its surroundings were buried by continual storms. However, advantage was taken of the many halts to glean facts concerning the people, and to photograph them and their homes.

The monasteries, although brightly painted—usually in red and gilt or some other gaudy mixture—were by no means clean. They often contained hundreds of monks in a marvellous condition of filth, wearing long greasy robes, and markedly Chinese in aspect; but very simple, child-like, and easy to get on with once their confidence had been won. Their personal habits took a lot of getting used to. No Tibetan, be he monk or otherwise, loves water. The majority never wash at all, while those who do wash indulge in this luxury so rarely as to be indistinguishable from the rest. The stale smell of unclean bodies, combined with the fumes of incense, the stench from rotten fat, and the still worse smell from open drains and masses of garbage, so tainted the air that, in a head-wind, a monastery might be sensed long before it came into sight.

This is not the place to speak of the many curious Tibetan customs; but one, at least, must have revolted our travellers. When a Tibetan dies his body is usually handed over to a butcher, who cuts it up and exposes it to the vultures. When the bones have been picked clean, they are ground up by the butcher and thrown to the winds. This mode of leaving the world is not likely to appeal to the fastidious.

Throughout the summer work went on. Wheeler made a most excellent map, often under circumstances of much difficulty and exposure to cold and mist. Heron worked out the geology. Wollaston collected everything that moved or grew. Bullock and Mallory, with Morshead, Wheeler, and Howard Bury, tried various lines of approach to the peak, and the last-named had, in addition, to keep all parties supplied with stores. It was not until September, however, that any practicable way to the peak was discovered.

You can imagine Everest as a stupendous pyramid, the top of which has been cut away, in a slowly-rising slope some two miles long. At one end—the west—a minor pyramid rises above this last for a further 800 feet. On all sides the very steep walls of the main pyramid are most difficult of access, and even at their bases the height is 20,000 feet or more, yet unless a practicable way for laden porters to the base were found, and then

a way up which loads could be carried or dragged to at least 23,000 or 24,000 feet, the further climbing of the peak would be impossible.

By repeatedly probing the glaciers and ridges, it gradually became clear that the only possible way was on the north-east, where a glacier nestled under the shoulder of Everest, with its surface some 21,000 feet up. Above this glacier a pass, choked with snow and ice, rose to some 23,000 feet—this they called the North Pass. If a camp could be placed on the pass, a way up the steep shoulder might be made, certainly to 25,000 feet, and possibly to the summit of the lower pyramid; then two miles along the ridge, and only the final pyramid's 800 feet would remain.

This sounds very simple; in reality it proved to be most difficult. It was mid-September; the monsoon snow buried everything; constant storms and mists obscured the view; and under such conditions to climb the 2000 feet to the North Pass up almost vertical ice slopes and corridors, cutting steps as one advanced, was an extremely hazardous undertaking. Indeed, it was Younghusband's experience of the Mustagh all over anew, but upwards, and with a party of experienced alpinists.

Roped together, they cautiously made their way up the edge of the pass, and on 24th September reached a snow ledge just beneath it, which would

do well enough for a high camp. Above them to the west rose Everest, a majestic curve of mountain, huge, menacing, and swept by incessant whirls of powdery snow. How the wind howled up there! They were to know all about that wind, both soon and in the years to follow.

The party comprised Morshead, Mallory, Bullock, and Wheeler. They made an effort to climb higher, but as soon as they rose above the level of the pass, the west wind, sweeping over the top like a hurricane, drove them back by its fury and its bitter cold. To complete their discomfiture a blizzard descended upon them ere they could get away, and for four whole days they stayed up there in the tents, in a spot almost as cold as the Antarctic and quite as desolate. When the gale ceased the white mantle of winter was rapidly shrouding the peak. To continue under such conditions would be suicidal; besides, the main work of the season had been accomplished. They broke up camp; the equipment was collected at lower levels; the mules staggered over the Jelep Pass once more; and most of the party returned to England. Man had looked at the mountain and had gone away to think over his next move against it.

During that winter preparations went ahead for the assault proper. In the spring of 1922 a still more formidable expedition assembled at

Darjiling, ready to set off as soon as the winter snow should melt.

General Bruce was the leader. The redoubtable Longstaff was a lieutenant. These and Messrs. Strutt, Mallory, Morshead, Norton, Somervell, G. Bruce, Finch, Wakefield, Morris, and Crawford, with Captain Noel as official photographer, formed the European contingent. There were four strong Indian N.C.O.s and a large party of picked porters and mules. Everything, down to the merest detail, was thought out beforehand.

They left Darjiling on 26th March. Despite several trying experiences in Tibet, such as being held up by blizzards, they reached the base of the Rongbuk Glacier, ten miles below the North Pass, by the end of April. Here they established a Base Camp. The place was a bleak wilderness between two bare mountain walls, and was 16,500 feet above the sea and five miles beyond the Rongbuk Monastery. The near presence of the monastery proved a good thing; for the wind blew away from the glacier, and the Head Lama, a most holy man, officially blessed the expedition. This made the porters feel more comfortable, so that they gave no trouble.

There had not been sufficient time in 1921 to explore the glacier downwards from the North Pass to the monastery, but it now turned out to

be an eastern branch of the Rongbuk Glacier. The first thing then was to find a way up it to the pass, which the coolies might follow, and to establish camps two or three miles apart.

On 2nd May Strutt, Norton, and Finch marched a short way up the east branch and there established Camp I, at about 18,000 feet. Three days later Strutt, Norton, Longstaff, and Morshead pushed farther up, and after much difficulty established Camp II, on 7th May, at 19,360 feet. Longstaff now fell ill with influenza, but the others went on, and on 8th May established the advanced Camp (No. III) at 21,000 feet, near the base of the North Pass ice-cliffs. They then returned. Longstaff was no better, and eventually had to be carried back to the Base Camp.

Meantime other members of the party were extending their radius of action; heavily laden coolies staggered and slipped up the treacherous slopes; stores were successfully gathered into each high camp; and a few days later Mallory and Somervell fixed ropes up the steep North Pass side to help the porters to ascend. All was a hive of activity, it being understood that the activity became less and less as the altitude increased.

On an ordinary glacier such progress would have been very slow, but this was a most extraordinary glacier. Parts of it were exceedingly

rough, being nothing but a mass of ice peaks, each from 50 to 100 feet high, and as jagged as a saw edge. Round these strange frozen needles laden men had to wander until they came to the clear ice; and on the latter, although there were not many crevices, the going was very bad, as the snow usually melted off early in the day and left the worst of footholds. Right down the centre of the glacier ran a trench nearly as wide as the Thames at London, and considerably deeper: this was obviously a waterway in times of melting, but at present it might serve for a road if a means could be found of reaching its floor. Morshead successfully tackled the difficulty.

Glacial lakelets of great beauty occurred among the fantastic ice spires, but these did not contribute to the advancement of the expedition. Nor did the climate help. By day the sun shone with great ferocity, its rays burning through the thin air so that a solar thermometer would register 180 to 190 degrees Fahrenheit; despite this the winds were terribly cold. At night the temperature fell to far below freezing-point, and the rushing rivulets were chilled into solid ice.

On 17th May they went one step farther. Strutt, Morshead, Norton, and Somervell, with coolies, all roped in parties, climbed with stores from Camp III to Camp IV, in mist and wind, just below the summit of the Pass. The route was

so precipitous that steps had to be cut with ice axes, but eventually they dumped their loads at Camp IV, 23,000 feet above the sea. At this point Strutt, who had gradually fallen back from the lead to the rear, experienced so much difficulty in breathing and climbing that he decided to leave himself out of the climbing party of which he was the head. In his eyes, as in those of all the rest, one individual's mishaps mattered nothing; it was the expedition which counted, and only the soundest men must go on.

Time was running away. If the monsoon were to start early in June, bringing with it snowstorms and bad weather, all the hopes of the climbers would be dashed. Although it might have been advisable to make the first attempt on the summit with the aid of oxygen, Captain Finch (who had charge of that section) was ill at the base; the apparatus, moreover, had not yet been got up so high. Accordingly the first assault was made without it, by Mallory, Somervell, Morshead, and Norton. They intended to make one more camp, and, after spending the night there, to dash for the summit. Remember, they were already almost as high as anyone had ever been, and were sleeping at 23,000 feet, a thing endured by men only once or twice previously.

The weather, which had been wild, with strong westerly gales, now improved. In bright sunlight,

on 20th May, all were ready to start—all but the most important members, the porters, who had gone down with mountain sickness. Treatment with fresh air revived them sufficiently to enable a start to be made one hour late; and hours count as days upon high mountains.

As soon as they climbed above the Pass to the snow slopes leading up to the north-east face of Everest, the wind began to rise again, and its cutting blasts drove them round to the east side of the ridge for shelter. The way became extremely steep and slippery, the rocks tilting towards them in overlapping layers, like broken tiles, and sometimes concealed by ice and snow. At the worst places steps had to be cut, a slow and galling process at any time, but doubly so in that bitter wind, and at a height when every effort was required to collect air for the lungs, not to expend it in work. At 25,000 feet a sort of shelter offered beneath some rocks, and here two small tents were pitched on the sloping mountain-side, it being impossible to level them up properly. They were now higher than men had ever climbed before. The porters were sent back, and the four Europeans, after the great labour of cooking food and boiling water, spent a most unhappy night, the uppermost man in each tent rolling down on his unfortunate neighbour and crushing him against the sharp stones. Worse troubles had

already appeared. The cold wind, in fact, had wrecked their enterprise. One of Norton's ears was swollen to a huge size by frost-bite; Mallory had three frost-bitten fingers, and Morshead, who had put on his windproof clothes too late in the day, was really ill. To add to their misfortunes, snow and hail fell during the night. The prospect of walking next day up a slope like a house-roof, which was covered with snow and loose ice, was not a cheerful one.

They rose at 6.30 but could not get the cooking done until 8 o'clock. Immediately after the start, Morshead found that it was impossible for him to proceed, but the rest climbed on, pausing frequently for breath, and noting the tremendous rate at which their hearts beat. They went slowly and ever more slowly, only a few steps at a time. At last they stopped, having just failed to reach the summit ridge of the truncated pyramid. They had attained 26,986 feet; and here Somervell photographed his companions—the highest snapshot ever taken up till then. The climb from the camp below (No. V) was only 2000 feet, but it took them more than six hours; two hours sufficed to bring them back again to Morshead.

It was then four in the afternoon. Leaving the tents, they stumbled down the treacherous slopes, the only fit man being Somervell. Morshead kept up with difficulty; the others were both

frost-bitten. Suddenly a slip occurred and three men fell; but the leader thrust his ice-axe deep into the snow, and the rope safely took the strain and held them up from a glissade to certain death. Darkness was falling; ominous lightning flashed across the sky; the steps which had been so laboriously cut on the ascent could not be found, and the situation looked serious. Nevertheless, they stumbled down to the North Pass in safety.

At this point further descent was hindered by the ice-cliff with its deep gashes. It was now quite dark, but so still that Somervell lit a candle, and by its aid the four men tried to find the guide ropes, which had been buried beneath the new snow. At one moment they had to jump fifteen feet down a little cliff into a snow bed—by that feeble light it might well have been fifteen hundred—but they took the risk, and landed without an accident. The light went out. To stay up there in the intense night cold would certainly have meant the death of some of them, if not of all. In the darkness they still searched for the guide rope, and by a happy chance it was found. They now got safely down to Camp IV, only to find that the porters had all gone, and had taken the cooking apparatus with them. However, they had at least a shelter. After six weary hours of darkness they started anew the next morning, and by noon four worn-out climbers staggered

into Camp III, where they were cared for, and passed on to the Base Camp. Three of them rapidly recovered, but Morshead was ill for a long time, and for months looked like losing several fingers.

From this experience you will see that it was one thing to climb upwards on Everest, but quite another matter to descend again.

A second attempt was now afoot, with the use of oxygen, the climbers being Captain Finch and Geoffrey Bruce, with Tejbir, a Gurkha N.C.O. They started from Camp IV on 25th May, with porters carrying supplies and oxygen cylinders, but wind and weather were both against them, and at 2.0 p.m. a camp was made at about 25,500 feet, the porters then being sent back. They had climbed thus high along the ridge, and, believing that the actual crest is less exposed to the wind's full force than the windward side, had pitched the tent on the very edge, with a great cliff descending for nearly a mile to the glacier below. The wind grew to a howling gale. Snow penetrated their frail covering, and a layer of it covered everything; the tent strained and tugged at its ropes, as if the whole affair, with its human freight, would blow over the precipice at any moment; and at last they had to reinforce the guy ropes with their alpine ropes, for fear lest they should be carried away. At this spot they spent an un-

forgettable night, the gale howling outside, and the tent walls flapping madly. During lulls they crawled outside to assure themselves that the ropes still held; but the icy wind drove them back again within a few moments. Morning brought no relief; nevertheless Finch was determined to see it through, and Bruce and Tejbir gamely supported him. They stayed the whole day in the tent, conscious of hunger (for they had taken only one day's rations); but towards evening, porters from Camp IV brought up flasks of hot food and tea from Noel, who was watching from below.

A second night in that wild spot was made tolerable only by the use of oxygen, small doses of which ensured some repose to all three. Before day broke again they prepared to start, the wind having dropped, and presently the sun came out. But the conditions were arctic, for their boots had frozen hard and had to be banged into shape before they could be got on. The weight of their equipment was considerable—40 lb. each for the Europeans and 50 lb. for the Gurkha.

As soon as they started climbing, their old enemy, the wind, commenced to howl, as if Everest had deliberately called upon its powerful aid against the assailants. After going some way Tejbir collapsed, and in his fall crushed some of the invaluable oxygen apparatus. The others

sent him back to the tent, the only man of his race who had ever reached such a height, and then pushed on once more. The actual climbing, though slippery, was easy; with the aid of the oxygen they surpassed the height of Mallory's party, besides getting very much farther along towards where the western pyramid, grim and snow-flecked, rose into the sky. Soon they were only half a mile from the summit, although still 1700 feet below it.

Another accident determined their fate. Bruce's oxygen apparatus went wrong, and while, gasping, he was connected up to Finch's tube, his companion repaired the damaged cylinder, surely one of the most remarkable mechanical jobs on record, carried out five miles above the sea! They were at the end of their tether however. Weakened as they were by hunger and by two nights' exposure at a great altitude, the final climb appeared to them impossible, for even if they reached the top it was most unlikely that they would ever get back. They returned to their high camp, picked up Tejbir (whom they found fast asleep), and hastened to descend. The faithful Noel, who had been watching their progress from the bitterly cold and exposed North Pass, guided them down to the glacier, but even so they were dead beat at the finish. Bruce was badly frost-bitten and had to be taken down to the base on a sledge, but

Finch had suffered less. Thus assault number two failed.

Although the monsoon might come at any moment there was still time for a final attempt. Mallory, although the great exponent of climbing without oxygen, consented to go up again carrying cylinders of the gas. Somervell and Finch accompanied him, with Wakefield and Crawford in support.

They left the base on 3rd June; immediately afterwards the monsoon broke and a snowstorm held them up for thirty-six hours. Now that the enterprise was under way, however, they would not stop, but Finch had to give up at Camp I, not having recovered from his great climb of a week before. The others reached Camp III on 5th June, rested a day, and on 7th June started up the precipitous face of the North Pass. They were roped in four parties—Mallory, Somervell, and Crawford, with fourteen picked porters. When only half-way up disaster overtook them. An avalanche of snow carried them all away, and two whole parties were swept into a crevice. The remainder, picking themselves up, and surprised to be still alive, hastened to the edge and began a frenzied effort to rescue their comrades from the masses of snow and ice. Two men were brought up alive, and six dead; the ninth victim was never found. So ended the third and last attempt

on Everest in 1922, in an atmosphere of gloom and disaster.

But man, though beaten, was loth to admit the fact. Preparations went forward for another attempt. Again Government permission was sought and obtained, and again, in 1924, many of the heroes of the first assault were gathered together at Darjiling. General Bruce was once more the leader, with Colonel Norton as second in command. Mallory led the climbers, supported by the hardy Somervell. Geoffrey Bruce commanded the transport; Noel did the photography. The new-comers were Messrs. Beetham, Hingston, Hazard, Irvine, Macdonald, Odell, and Shebbeare. As on the last occasion every man pulled his weight to the uttermost, but Everest won in the end.

At first they met with extremely bad weather; howling gales of bitterly cold wind stormed upon them; the mist, snow and low temperatures were altogether abnormal. General Bruce became ill in Tibet, and Norton took over the leadership. Camps were pushed up the glacier, as in 1922, but they had to be abandoned one after the other, and a retreat made to the Base Camp owing to the incessant storms. There were many minor casualties among the porters, due to frost-bites and snow-blindness, and one Gurkha died.

A rest at the Base Camp and the official blessing

of the Rongbuk Lama revived the drooping spirits of the carriers. Again they started, and again they reached Camp III, beneath the fatal ice cliffs of the North Pass. The greenish-black mass of Everest towered above them, majestic in its strength and size. The climbers were troubled with harsh dry coughs, Somervell being the worst sufferer; Mallory also was far from well. Owing to changes in the ice at the North Pass there was much difficulty in getting up to Camp IV, Somervell, in a state of high fever, being forced to return to No. III. By persistent work, however, a new route up the Pass was evolved, and up this, on 21st May, Somervell, Irvine, and Hazard guided the porters. At one narrow steep stretch—an "ice chimney", as it is called—the way proved too narrow for most of the loads, which had to be hauled up vertically by main force, Hazard directing this hard work from above.

All the while it had been snowing intermittently. Now, to make matters worse, it snowed throughout the day, while on the succeeding night they made an attempt to sleep in that frightfully exposed spot, with 56 degrees of frost, a heavy wind, and very rare air. With grim determination they all hung on at Camp III, starting afresh with the loads on the 23rd, when the weather brightened. Once more a midday snowfall upset everything; the treacherous cliffy slopes could not be crossed

for fear of another avalanche; and Hazard, with a dozen porters, was stranded near the top. Despite this, he guided eight of them down to the comparative safety of Camp III, but the remaining four men, taking fright at a steep ice slope which ended in an abyss, remained above, and could not be got down.

Here was a pretty plight! The marooned men, having lost most of their provisions, stood every chance of freezing to death, especially as a further blizzard might come on at any moment and cut them off from the main body for days. Rescued they must be, and Norton determined to undertake it immediately. Once more he gave the order for all porters to descend to lower camps, while three grim men—Mallory, Somervell, and himself—stayed on until the early morning light should enable them to see their way up the cliff. At considerable risk to their own lives, they reached a spot near the marooned men. You must understand that this was on a very steep slope with at the bottom an abrupt drop of many hundreds of feet to the glacier below, the ice of the slope being mantled by snow in the most treacherous state.

Somervell led the way, cutting steps as he went, and “constantly stopping to lean his head on his arm and cough”. In the meantime the others hung on to the rope, to pull him up should he

slip. He advanced along the slope until he reached the rope's end, when there was still a matter of several yards between himself and the porters.

But they had to be got down. Despite his cough, he cracked jokes with them, to give them confidence. Thus encouraged, they ventured on the slope without a rope. The first two passed safely, but just as the second man came within Somervell's grasp, the remaining two slipped "towards certain death", but pulled up on the very edge of the abyss, as by a miracle. The gallant Somervell did not lose his head. He got the second man out of the way, drove in his axe like a post, and tied the rope to it; then, using the rope as a support, cautiously went out as far as it would go, and, with outstretched arms, could now just reach the porters. He grabbed hold of them, and hauled them back to life. You may often see such happenings in a cinema studio; here was the thing in real life, with the gaunt precipices of Everest for a background.

There was now a second general retreat to Camp I. Defeated, but not dismayed, the climbers made fresh plans. Only fifteen porters—"The Tigers", they were dubbed—remained in sufficiently good condition to make another effort, but there were still seven of the climbing party determined not to accept defeat. After a long discussion about oxygen, it was decided to make two succes-

sive efforts, each by a party of two climbers, supported by porters as far as possible; the remaining three Europeans formed a reserve for a final attempt if necessary. The base was once more to be the high Camp IV on North Pass, a place which was by now heartily hated and dreaded by all of them. They were forced at first to do without oxygen, as hitherto it had not been possible to get it up the Pass.

On 1st June, the first assault proper began. Mallory and Geoffrey Bruce started up from the Pass, and that same night the second party—Norton and Somervell—slept there. Odell, Irvine and Hazard were in reserve.

2nd June was so windy that the porters lost heart, and would not go on. In the effort to carry their loads, Bruce seriously strained his heart; and eventually he and Mallory had to return without having achieved anything of note. You may ask, why did they not attempt to rush the peak; but one cannot rush at the rate of twenty steps for one prolonged halt, while one coughs up blood and pants for dear life.

Norton and Somervell fared better, despite a heavy battering from the wind. They passed the first party as it was returning. They pitched their high camp on the east side of the ridge, so as to avoid a repetition of Captain Finch's terrible two nights there in 1922. This was at 25,000 feet.



The two climbers and their four porters slept there. The next day one porter was left behind, but the remainder carried their loads, in ideal weather, up to 26,700 feet, where they established the highest camp that had ever been made. One of these men had badly injured his knee, yet persisted, with great gameness, until his task was finished. Despite gales, squalls, loose stones and rare air, not to mention Somervell's terrible cough, victory now seemed in sight. The porters were sent back, and the climbers spent a comfortless night, waiting for the great day to dawn.

They started next morning at 6.40 a.m. The actual climbing offered no difficulty, but the pace grew slower and slower. As they passed above 27,500 feet, each step was punctuated by a pause, and by numerous deep breaths. With oxygen, success would have been certain; without it, they became steadily weaker. Finally, at about 28,000 feet, Somervell stopped, and Norton went on alone.

He was now quite close to the upper pyramid, though some 200 feet below it. Somervell sat and watched him for an hour, during which he did not ascend more than eighty feet. At last he also stopped. The height was 28,130 feet, and he was in a gully, with very difficult climbing ahead. He felt that if he did reach the summit, he would never get down again. Absolutely exhausted, both

men turned back reluctantly, and, a little after darkness, were relieved from Camp IV. Everest had triumphed again.

All was not yet over. The oxygen had arrived, and after some discussion Mallory and Irvine set out on a final effort, carrying cylinders. Meantime the remainder were in a sad plight. Norton went snow-blind during the night. For two days and a half he could see nothing; but it was necessary to get him down to the relative comforts of the Base. This was accomplished by Hingston and Hazard, who guided the blind man's steps across the deadly ice cliffs of the North Pass by a magnificent piece of work. Bruce, too, was quite exhausted, and had been forbidden to climb again. Somervell's plight we already know.

It is a singular thing that in each of the attacks on Everest the second climb was the best, and the third disastrous. Mallory and Irvine, with Odell in reserve, left Camp IV on 6th June, safely reached the high Camp VI, and were seen by Odell, at ten minutes to one, on the afternoon of 8th June, climbing steadily up the base of the final pyramid, with about 800 feet still to conquer. They were then about 100 feet higher than Norton had attained. A passing storm shut them out from Odell's view, and though he looked afterwards, hard and often, he could not find them. He waited, in much anxiety, for a long, long time;

and when a day had gone, and they had not returned, he went up to the last camp, but they were not there. Either they had stopped, exhausted, on the high peak, and had been frozen to death, or they had slipped and fallen to their doom. No trace of them was found, nor could a proper search be made, owing to the lateness of the season, the vast extent of the mountain, and the weakness of the other climbers.

This crowning disaster closed the attack on Mount Everest for nine years. All that was mortal of two brave men lay up there, somewhere beneath the shadow of the highest point on earth—a fitting burial-place for such gallant hearts.

But the matter could not be allowed to rest there, although it was August, 1932, before permission was given for another attempt. A new climbing party was then organized, under the leadership of Mr. Hugh Ruttledge. Its fourteen members included Messrs. Smythe and Shipton, who had recently conquered Kamet (the highest successful climb on record), besides two members of the Old Guard of 1922-4, Crawford and Shebbeare. Oxygen cylinders again formed an important item; clothes were both numerous and thick; and the expedition took Arctic tents, as seemed most fitting for the extraordinary winds which raged on Everest.

Early in March, 1933, there began a long

passage of men, supplies, and porters through the frozen and savage valleys of Tibet to the Rongbuk Monastery, where the Head Lama again blessed the enterprise. Despite this benediction, however, a succession of gales and snowstorms delayed the advance so much that it was 2nd May before the Englishmen established Camp III at the base of that well-known obstacle, the North Pass; and by this time the usual crop of illnesses and accidents was beginning to appear.

Now came the first great difficulty. The route proposed differed scarcely at all from the older ones; but the trail of 1924 had been buried under avalanches, and the only way up the frozen wall was the very dangerous one of 1922, where the seven porters had been killed. Smythe and others at once began to cut steps and to affix ropes to aid their carriers, working in a constant flurry of snow squalls from the Pass above. The weather was awful. It took *nine days* for this body of experts to establish the next camp (No. IV) on the lip of a crevasse 250 feet below the Pass; moreover, all the forces of the mountain now displayed themselves, as if conscious of the peak's danger. One man after another fell ill. Then the monsoon broke, several days before it was expected. Storm after storm blustered and raged on the walls of Everest, while the little outpost at Camp IV shivered in the blast, and gazed hopelessly out

upon mist and falling snow for an entire week.

On 22nd May, however, they made a dash for it and established Camp V much higher up, right on the ridge, and in the teeth of the west wind. From this point Wynn Harris, Greene, Longland, and Wager intended to establish a final camp (No. VI), but the weather decided otherwise; and after clinging like specks to the great wall for three most miserable days the beaten men retreated to the comparative mildness below. So much snow had now fallen that even Camp IV had to be temporarily abandoned, lest it should be overwhelmed by an avalanche from the Pass.

On 29th May, Wynn Harris, Wager, and Longland, with eight porters, tried once more, and at last placed the sixth camp, 700 feet higher than Camp VI of 1924 and half a mile nearer to the final pyramid; but even with this advantage success seemed doubtful, because the approach was barred by two vertical and in places overhanging cliffs, known as the First and Second Steps; and unless a way round the latter in particular could be found the mountain would prove unclimbable. Nevertheless, after a bitterly cold night, Harris and Wager started out on the attempt, at 5.40 a.m., and in calm weather.

They had not gone far when they discovered an ice-axe, a tragic relic that could only have belonged

to Mallory or Irvine. Its position so far from the final pyramid implied that the missing men had been returning downhill, and had slipped and fallen; if so their bodies must be lying beneath snow and ice on the glacier many thousands of feet below.

The outwardly sloping, tile-like ledges were so dangerous that Harris and Wager tried the alternative route along the crest of the ridge; but after losing several hours in very rough ground under the Second Step, they were compelled to return to the side of the "house roof". They next crossed the head of a tremendous snow-covered gully, with a vertical cliff beside them and clouds rolling along far below. They slowly approached the final pyramid, and had gained a height of 28,100 feet near to the spot where Norton had retreated in 1924, when the late hour put an end to their hopes. To go on might mean a night in the open, and at that altitude there could be only one end to such folly. They therefore returned to Camp VI, where Smythe and Shipton were awaiting them.

Another day passed, the little tent straining, and snow sweeping in; then, on 1st June, the last attack was made. Shipton soon found himself becoming exhausted, and he stopped; so Smythe went on alone, until by 10.0 a.m. he had reached Wynn Harris's farthest. He now had the crown-

ing mortification to find the slabs coated with the loose snow that had fallen the day before, and to persist would probably have been fatal. The gully wherein Harris, Norton, and he found their hopes crushed was, besides, an exceedingly difficult spot from the climbing point of view. So he too went back; and after spending a night alone in Camp VI, and being blown down several times by furious gusts, he followed his comrades to the Base Camp.

This really closed the season's work. Every day the great mountain became more heavily clad in snow; and although the climbers were concentrated once more at Camp III, it was soon evident that the higher camps must be abandoned and that no more could be done that season.

While the land expedition had been slowly approaching the peak through the barren valleys near Kampa Dzong, two aeroplanes suddenly rose above the haze-buried hills of Nepal, and, soaring to a greater height than Everest's, swooped down upon the defiant summit, circled twice round its stupendous walls, and then, with a triumphant roar and a sputtering of oil, disappeared into Nepal again (3rd April). Fifteen days later, when Ruttledge and his men had just established their Base Camp on the East Rongbuk Glacier, the same two planes again appeared over the mountain crest, lingered there long enough

to take some magnificent photographs, and flew off as swiftly as they had come.

This brief record covers a notable achievement. By the generosity of Lady Houston, and the sanction of the Indian and Nepalese Governments, an Air Force reconnaissance of the mountain had been made possible, its main object being a photographic survey from above. Air Commodore Fellowes organized two planes, complete with oxygen supply, and piloted by Squadron-Leader Lord Clydesdale and Flight-Lieutenant D. F. McIntyre respectively; Col. Blacker took photographs from Clydesdale's machine and Mr. S. R. Bonnett from McIntyre's. The apparatus comprised vertical and obliquely placed cameras, besides a cinecamera; and it was hoped to make continuous strips from a known base in Bihar to the mountain and back.

The flight itself was a great success. The 320 miles took just three hours, and Everest was cleared by about 100 feet; with no incidents worth mentioning, except that Bonnett was partially choked when his oxygen pipe fouled. The photography, however, was not so successful, mainly because a thick haze hid the first part of the route, thereby leaving the survey with one end "in the air". Nevertheless the risks were deemed so great that a further flight over Mount Everest was forbidden.

A fortnight passed, and the members were actually under orders to return home, when a striking thing happened. Commodore Fellowes had given permission for another survey flight, but not *over* the mountain. When he turned up at the aerodrome on the morning of 18th April, after a few days' illness, he was surprised to learn that both machines and men were missing; they had in fact seized a favourable moment, and had headed for Everest. They obeyed orders so far as not actually to fly *above the summit*; but they lingered on a line with it long enough to take one of the finest photographic mountain panoramas ever obtained. On this occasion continuous strips were made which gave the desired information; and thus, by the kind of "obedience" which made Nelson apply his telescope to his blind eye, did these intrepid aviators add another to the many records of the R.A.F.

In 1935 the Tibetan Government again consented to a British Expedition to Mount Everest in 1935-6. Accordingly, in the summer of 1935 a small party under the leadership of Mr. Eric Shipton carried out a reconnaissance of the western approaches to the mountain, and collected much valuable information for the main expedition which started in the spring of the following year. This was again led by Mr. Hugh Ruttledge, and included Wynn Harris and Smythe,

who had taken part in the previous expedition.

The first assault party was in position on the North Col a week earlier than was originally planned, but unfortunately there was a complete failure of the strong north-west winds that usually precede the monsoon and blow the snow from the mountain. Also, the monsoon broke on Everest a fortnight earlier than usual, and the resultant heavy snowfalls made the North Col unsafe and forced the climbers to retreat to Camp I at 18,000 feet.

A few days later, however, there was a lull in the monsoon, and a strong north-west wind sprang up and blew the snow in sheets from the mountain. The ascent was immediately resumed, the climbers hoping that the lull would continue, and that when they reached the highest ridges the wind would fall sufficiently to let them gain the summit. But the mountain won again, and before the demons of the air who guard its slopes, the climbers had to retire, and the attempt had to be abandoned for the season.

This expedition had the great advantage over its predecessors of being linked by wireless with the rest of the world. Even the highest camp had an ultra short-wave transmitter and receiver. Thus, not only were the various parties in the mountain able to communicate with one another,

but, and this was of immense value to them, they received frequent monsoon and other weather reports which saved them much dangerous and arduous work.

—From *True Stories of Modern Explorers* by
B. Webster Smith.

Mauled by a Tiger

During the latter part of my career as a tea-planter in India, I happened to be stationed in one of the outlying districts of Sylhet. Tigers were particularly numerous there, but the huge tracts of dense and practically uninhabited jungle in this part of the country afforded ample cover, and they were seldom seen in daylight, except by those who had opportunities of "sitting over" the carcasses of cattle or other animals that had been killed by them. Such opportunities were of frequent occurrence in the neighbourhood of the tea gardens, owing to the fact that the estate coolies allowed their cattle to roam at will after dark, so that the beasts fell an easy prey to any marauding tiger that happened to come across them. With such temptation it is not surprising that the tigers of this district had become notorious cattle thieves. They seldom attacked human beings, but the presence of these animals is always a potential danger to the lives of the people in the district. Sooner or later a coolie is killed, which means that a tiger has taken its first step towards becoming a confirmed man-eater.

Two men belonging to the estate of which I was in charge had been done to death, within a week of each other, by a tiger or tigress that was in the habit of frequenting a jungle path much used by people on their way to the bazaar. The evidence pointed to the fact that a tigress with cubs in the vicinity was the perpetrator of the deed, as in neither case was the body of the victim touched after being killed. If an habitual man-eater had been the aggressor, both would at least have been dragged into the jungle to be devoured at leisure, but the animal had made no effort to carry them off.

Shortly after these tragedies had occurred (on 12th of August to be exact) I received word from the assistant of a neighbouring estate, saying that one of his cattle had been killed by a tiger that morning, and asking me to sit over the carcass with him. He was new to the game, as he wasn't long out from home and had never seen a wild tiger in his life, so I at once decided to accept. I was all the more willing to do so because the path on which my coolies had been killed led from his garden to the bazaar, and I not unnaturally believed that by sharing his vigil I might have an opportunity of avenging their deaths.

Little did I dream that my decision was to affect the whole of my future life, or that it was to result in bringing my opportunities for seeing

tigers, in all the beauty of their natural surroundings, to a sudden and violent end.

I rode over at about 4.30 p.m., and at once proceeded with A. to the scene of our prospective vigil. The victim was a fully-grown bullock, which was lying with its head twisted under it in a small open space between the tea and the jungle. A bamboo platform or machan had been cunningly erected in a convenient tree, growing amongst the tea bushes about twenty paces distant from the spot where the bullock was lying. We lost no time in climbing to this vantage point with as little noise as possible, as it was quite likely that our quarry might be in the immediate vicinity at this late hour in the afternoon. Our machan was fifteen to twenty feet up and, though well hidden, commanded an excellent view of all approaches to the kill as well as of the bullock itself, and as we had taken the precaution of bringing a cushion each, we made ourselves comparatively comfortable. The jungle immediately behind the spot where the victim was lying was thick and almost impenetrable to a human being, while to our left was an extensive patch of long grass from three to four feet high. In country such as this a tiger generally visits its kill before dark if the neighbourhood has not been unduly disturbed, and we were consequently hopeful of at least obtaining a shot.

Every detail of the scene is impressed upon my memory, and the whole sequence of events passes vividly before me as I write.

On the neighbouring trees a large number of vultures had collected, where they sat patiently awaiting the lead of the most venturesome to commence their meal.

The faint, distant murmur of voices from the coolies, as they returned to the lines after finishing their various tasks, could be distinctly heard; while from the lines themselves the barking of a pariah dog, mingled with the beat of a tom-tom, was clearly wafted to our ears on the still evening air.

A large monitor lizard slithered out of the patch of grass and moved, like a miniature crocodile, in the direction of the kill, where it was eventually lost to view.

A couple of crows paid a visit of inspection, but finding the skin of the carcass still unbroken and too tough for their beaks to penetrate, they soon went off in quest of a more manageable meal.

The sun was rapidly nearing the horizon, and the dead bullock was already in shadow, before the first vulture descended, but its example was immediately followed by others till, at the end of perhaps fifteen minutes, the kill was blotted out by a seething, squabbling mass of the loathsome birds. Fighting, chattering, and tearing whenever

they could obtain a hold on some part of the bullock's anatomy, they would soon have stripped it to the bones had the noisy feast been allowed to go on unchecked. This was not to be, however.

Suddenly, from the black shadow at the jungle edge, sprang the dark form of the rightful owner, clear into the midst of the struggling birds. In absolute silence it came, scattering the noisy rabble in the utmost confusion. There was a roar of flapping wings as the birds frantically endeavoured to rise out of reach of the death dealing paws, and in less time than it takes to tell a few scattered, quivering bodies were all that remained of the hideous throng, the survivors having completely disappeared.

The whole incident happened so quickly that for the moment A. and I scarcely realized that the tiger had actually arrived, but we were not left long in doubt. There, within twenty paces of where we sat, stood the unmistakable form, broadside on, with head raised and tail twitching from side to side, appearing almost black in the last remnant of the rapidly fading daylight.

I whispered to my companion that this was our opportunity, and we raised our rifles at the same moment. Aiming, as nearly as I could judge in the dim light, at the angle of the shoulder, I pressed the trigger. A., it appeared afterwards, did not fire at all, having forgotten to release his safety catch.

At the shot it seemed as if pandemonium had suddenly been let loose about us. With a succession of the most terrifying roars the tigress (as it proved to be), performing a series of somersaults, came rapidly straight towards our tree, roaring fiercely all the time. There was no doubt that she was severely wounded, but by the time I had picked up my twelve-bore fowling-piece which I had beside me, loaded with ball and slugs, the stricken beast had passed under our platform, where it was impossible to get another shot at her. From here she turned off to the left, and the last we saw of her that night was as she turned head over heels into the long grass. There she apparently fell and, as the uproar suddenly ceased, we surmised that she must be dead or nearly so.

After waiting for some considerable time, during which she had made no further sign of life, we descended from our perch—not without misgivings that she *might* still be able to charge us, which would have been decidedly unpleasant to say the least of it, as it was now almost dark. However, she still made no sign after we had reached the ground, so we quickly slipped away to a healthier neighbourhood, as it is folly to take risks by remaining in the vicinity of a wounded tiger that you don't positively know to be beyond doing damage.

Of course nothing more could be done that

night, but on the way back to A.'s bungalow, we arranged our plan of action for the morrow. It was decided that we should ask a neighbouring planter, who had had experience of this dangerous sport and who was a dead shot with a rifle, to join us in the morning, as there was the possibility that my shot had not been fatal, and it was essential to be prepared for this. We also arranged for a gang of ten of the pluckiest coolies to be ready at 9 a.m. to act as beaters.

By that hour on the 13th the three of us met at A.'s bungalow, and at once set off for the scene of action, each accompanied by his pet "Shikarri" to act as gun-bearer. My "battery" consisted of a .405 magazine rifle, and a twelve-bore fowling-piece that I invariably used for this sort of work, and in whose "stopping" power (when loaded with a solid spherical bullet in the right barrel and slugs in the left) I had every confidence. My companions had similar weapons, but their rifles were the old army pattern .303 Lee-Enfield. On the way we picked up our band of beaters, each of whom carried a large "dha" with which to clear a path through the dense jungle.

When we arrived at the spot where the tigress had been wounded the night before, there was no difficulty in following her tracks to the edge of the patch of grass in which she had disappeared. Apart from the well-defined "road" she had

made during her struggles, there was a good deal of blood spattered on the leaves and branches of the tea bushes through which she had gone.

Before entering the high grass, we made the coolies bombard with lumps of earth and stones the place where we thought the animal had fallen the previous evening, while the three of us stood with guns at the "ready" in case of a charge. As there was no response to this fusillade, we proceeded cautiously to cut a path behind my tracker, Tickka, who was slowly following the spoor under cover of our weapons. Both A. and I felt sure that we should find the beast lying dead at the spot where she had fallen, but when we reached it, we discovered that, though she had apparently lain here for some considerable time and lost a great quantity of blood, she had eventually gone on. This discovery caused us to have misgivings about the wisdom of following her through such country, as it was evident that she was still alive, but it is the duty of every sportsman to do all in his power to end the sufferings of a beast he has wounded, and we decided to stick together and carry on.

Stopping every few minutes to listen for some indication of her whereabouts, we slowly cut our way right through the grassland without any sign from our quarry, beyond the blood tracks we had so patiently followed. On entering the bamboos

the going was very much easier for a time. The spoor was difficult to follow, but it was not so trying to the nerves, as the jungle here was comparatively open and we could see some distance ahead of us. There was now no doubt that the tigress had considerably more vitality than we at first supposed, or she could not have gone so far without lying down again. We observed that she had drunk at a small stream, where for the first time we found her "pug" marks, deeply imprinted in the sandy margin. She had evidently crossed this some time previously, as her tracks, where she had emerged on the other side, were quite dry. We began to think it probable that we might still have a long way to go before coming up with her. Following the stream for a hundred yards or so, the spoor then entered a dense patch of undergrowth, through which the coolies had again to cut a path.

It was necessary here to go in single file, so I took the lead as I had wounded the animal, and it was only right that I should take the greatest risk.

I had seen many tigers and shot a few, one or two of which I had followed up alone when wounded, and had never been charged, though I had been growled at and roared at more than once, so it was perhaps a case of familiarity breeding contempt. Anyhow I did not think the risk

was very great when the beast had three guns to face.

I had the twelve-bore in my hands with Ticka immediately behind me with my rifle; then came L. and his gun-bearer, while A., being the least experienced, brought up the rear.

I had just emerged from the path which had been cut by the coolies, into a small open space perhaps ten or fifteen feet wide, when I was greeted with a sound I am never likely to forget.

From the jungle to my right came a succession of short, coughing roars—the unmistakable challenge of a charging tiger. I could see nothing for the moment owing to the thickness of the undergrowth, but I stood my ground, foolishly, perhaps, in the belief that we would be able to put her out of action before she could charge home. I was quite unconscious of the fact that I stood alone.

My companions had, on the first sign that the tigress meant mischief, removed themselves to a safer distance, not unnaturally concluding that I was coming with them.

The roars increased in volume as the enraged animal drew rapidly nearer, but still I could see nothing but the shaking of the bushes as she rushed towards me. There was absolutely no doubt about her intentions, but I had no opportunity to stop her. The first view I got of her

was when she bounded over the scrub straight at me. I snapped both barrels of my gun at her as she was in the air, and next instant a snarling fury loomed through the smoke from my cartridges and I went down.

My gun was sent spinning from my grasp, and though luckily none of the blows she struck at me caught me fairly, their force hurled me backwards.

This probably saved my life, as the upper part of my body fell away from her when she collapsed, her back broken by my hasty shots. Unfortunately she still had the use of her fore-paws with which she caught me by the legs and dragged me towards her, then bit through my left foot.

My one thought was: "How long is this chewing-up process going to last!" I had no feeling of fear, and felt comparatively little pain from the wounds inflicted by the tiger, but on the report of a rifle shot, a red-hot iron seemed to pass through the big toe of the foot which was in the brute's mouth, and I am afraid that I did not add to my rescuer's peace of mind by shouting that I had been shot. At the report the tigress sank inert and lifeless, but I was still held a prisoner, as her jaws were tightly closed upon my foot, and the claws of her left paw were sunk deep in the flesh of my right leg.

When at last her mouth was prised open, and the objectionable claws removed, I was able to

get up and survey the damage. It was quite extensive enough, and I realized that my future prospects did not look particularly rosy.

There was a deep gash in my right arm extending from the elbow to the wrist, and every bone in the hand appeared to be broken, apparently by her teeth, though I was not aware that she had had it in her mouth at all. One of her fore-paws had ripped my coat across the chest, inflicting minor flesh wounds, while with the other she had struck at my head, but luckily only succeeded in leaving the impression of her paw and claws in my pith-helmet, which was picked up some yards away.

Her huge canine teeth had pierced the heavy shooting boot I was wearing at the time, and met in my left foot; and the bullet which ended her life had also smashed my big toe on its way through her head. There were also deep claw wounds in the muscle of my right leg.

My friends wanted to carry me, but I managed to walk, as I was not suffering much pain.

It was nearly one and a half miles back to A.'s bungalow, and as the reader can perhaps imagine, I had lost a considerable amount of blood by the time I reached the foot of the hill on which it was situated, and consequently *had* to be carried the last lap of the journey.

The coolies, carrying the dead tigress, formed

the rear of the procession. She was a short, thick-set beast, and was in all probability the one responsible for the deaths of the two natives, as there were no more attacks after this.

My two injured limbs had, of course, to be amputated, but the claw wounds gave me little trouble, and by the 5th of November I was able to leave for home.

—A. W. Strachan.

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